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# Railway Age Gazette

FIRST HALF OF 1917—No. 1

SIXTY-SECOND YEAR

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# Railway Age Gazette

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No. 1

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The action of the Interstate Commerce Commission in making effective July 1, 1917, a locomotive headlight rule,

### Headlight Rule

#### Slightly Modified

which is only slightly changed from the one previously proposed, is difficult to understand. As was noted in these columns, it was clearly shown in the recent hearings that the high intensity headlight was dangerous on roads operating more than one track and with heavy traffic. Engineers risked their brotherhood privileges to testify thus, although it developed in the hearings that engineers had been thrown out of the brotherhood, had lost their insurance rights and had been ostracised by their fellows for so doing. The commission assumes a grave responsibility in making such an order. How strong must the light be? The terms in the order are vague and read as follows: "shall afford sufficient illumination to enable a person in the cab of such locomotive who possesses the usual visual capacity required of a locomotive engineman, to see in a clear atmosphere a dark object as large as a man of average size standing erect at a distance of 800 ft. ahead and in front of such headlight." It appears to be entirely up to the individual inspector. A government which assumes to be as careful of individual rights as ours should at least lay down a simple scientific requirement which can readily be checked rather than a vague rule which may be abused by an inspector—who after all is only human.

The underlying purpose in the establishment of the postoffice in this country was the dissemination of knowledge in order

### A Tax on Intelligence

that its citizens would not only become more efficient but would be drawn closer together and form a really great nation. Journals and magazines of a national character have been among the greatest factors in developing a spirit of patriotism and in spreading practical and scientific knowledge. The Randall rider to the postoffice bill proposes to greatly hamper these forces, and possibly drive some of them out of existence, by introducing a postal rate based on the distance of transmission; i.e., up to 300 mi., 1 cent per lb.; 300 to 600 mi., 2 cents per lb.; 600 to 1,000 mi., 3 cents per lb.; 1,000

to 1,400 mi., 4 cents per lb.; 1,400 to 1,800 mi., 5 cents per lb.; over 1,800 mi., 6 cents per lb. In the first place, increasing the rate in almost direct proportion to the distance is illogical. Investigations have shown that the greater part of the cost of handling such mail is for service at the terminals. In the second place, considering the millions that Congress is appropriating each year for educational purposes, it seems to be out of all accord to discriminate between different parts of the country in the distribution of journals and magazines with a national circulation. It is equally important today, as in the early history of the country, that everything possible be done to foster national unity.

One of the best pieces of publicity work that has been done for the railways is being done by the Conference Committee

### A Good Piece of Publicity Work

of the Railways in distributing a stenographic report of the address made by A. B. Garretson, head of the Order of Railway Conductors, before the Economic Club of New York on December 11. The subject discussed before the Economic Club on that date was the settlement of railroad labor controversies. President C. R. Van Hise of the University of Wisconsin spoke for the public. Elisha Lee, chairman of the Conference Committee of the Railways, for the railways, and Mr. Garretson for the railroad brotherhoods. Dr. Van Hise's and Mr. Lee's addresses were excellent. The remarks of the latter were especially interesting because of the way in which they expressed the spirit of public service which has come largely to dominate in railway management. But, after all, from the standpoint of both the railways and the public, the best address was that of Mr. Garretson. Nothing that either Dr. Van Hise or Mr. Lee could have said would have demonstrated so conclusively the need for forcible intervention by the government in railway labor disputes as did the attitude assumed and the words uttered by the spokesman of the brotherhoods. The haughtiest, most potent and most brazen "malefactor of great wealth" never dared manifest in public the cynical, arrogant, bourbon disregard for the rights and welfare of all classes except his own, and for law, for order and for government itself that Mr. Garretson expressed.

To suggestions of legislation to restrict the right to strike he replied with assurances that the proposed law would be violated by his followers and with heated rhetoric regarding possible revolution. A general railroad strike would cause universal disaster and suffering; but what of it? Labor must have its "rights," which to Mr. Garretson is the same thing as saying that organized labor must be given whatever it demands, regardless of the means it uses to get them, or of the incidental effects upon society. If Mr. Garretson had been the head of the I. W. W. he could consistently have made the same speech. It is a piece of rare good fortune for the railways that the brotherhoods have put such a man forward as their chief spokesman, and no effort should be spared to gain the widest circulation for his utterances. "Speak softly, and carry a big stick" is a rule the wisdom of which some of the principal leaders of organized labor do not recognize. They think that the louder they threaten and the more they brandish their big stick, the more everybody will fear them. In the long run the main result of such foolish performances is to cause those who give them to be relieved of their big sticks.

### SOME ASPECTS OF GOVERNMENT MANAGEMENT

ADVOCATES of government ownership and operation of railroads occasionally point with pride to the fact that the government is able to operate the postal service, as proof that it could successfully manage the railroad business, which from the standpoint of revenue involved is approximately ten times as great. Such people will find some material which will be interesting reading, if it is not useful for their purpose, in the annual reports just issued by the postmaster general and the second assistant postmaster general. According to the latter, a large part of the work of the bureau of the second assistant during the past fiscal year "has been devoted to freeing the bureau from antiquated and impracticable methods and policies with a view to diverting unproductive energies to some fruitful field of endeavor," because "as might be expected of a vast institution which originated on a very small scale and developed rapidly, the operations of the bureau in course of time became barnacled with many sacred or impracticable precedents and practices." It is encouraging to know that the barnacles have been discovered, but if it has taken this long in the post office department, how long would it take the government to learn to run a railroad business?

Advocates of the eight-hour day frequently suggest that the railroads be turned over to the government as a means of attaining their object, presumably on the ground that Congress some years ago passed an eight-hour law for government employees. The report of the postmaster general says that "it is the department's desire in no case to require of any postal employee more than eight hours' work in any one day." The report of the second assistant says that investigation has developed "that men are on continuous duty on some lines in excess of 30 hours on trains, while instances of 12 to 20 hours' continuous employment on running trains are not infrequent." The attention of the bureau has been called to this "deplorable condition" on certain railway postal routes by railway postal clerks and others and it has been represented that "such hard work is more than the human body and mind can endure." The report does not state that its attention was called to these facts by certain invidious comparisons made during the recent campaign as to the difference in the attitude of the President and Congress toward government employees who have long been supposed to be working under an eight-hour law and its attitude toward members of the railroad brotherhoods who were threatening to tie up the transportation service of the country. The report states that these and other similar unfortunate conditions in the service are receiving careful atten-

tion and that an investigation is under way "to determine the feasibility of giving the mail clerks the rest period to which they are justly entitled."

While some people advocate government ownership of railroads on the ground that it would result in better treatment of the employees, others have opposed it on the ground that such a large army of government employees as would be thrown into the service of the government in case it should take over the railroads would be in a position to exert an unduly powerful influence over the administration of the business. Those who are interested in this subject will also find some food for thought in the statement of the postmaster general that the department's efforts to properly administer the postal service "have been made extremely difficult owing to the activities of certain organizations of postal employees which are becoming more pronounced every year." The report says that "they have been most persistent in their efforts to secure legislation favorable to themselves without regard to the interests of the service. Information now reaches the department that these organizations are becoming active politically and are attempting to control the nomination and election of candidates to public office, as well as to influence administrative officers in the matter of promotions, reductions and removals in violation of the spirit of the civil service law and the merit system. Much time of department officials which otherwise would have been devoted to increasing postal efficiency necessarily has been required in an effort to prevent these agencies from accomplishing their purpose."

If the employees of the post office department are able to cause so much trouble, what would be the result of adding nearly two million railroad employees, many of whom are already highly organized, to the government payroll?

### THE TRAIN SERVICE EMPLOYEES AND THE RAILWAYS

JANUARY 1 was the date on which it was provided that the Adamson act should go into effect. If it is constitutional, it is in effect now; but since nobody knows what the Supreme Court's decision regarding it will be, nobody knows whether it is in effect or not. Furthermore, if it is in effect, nobody knows what is the correct interpretation of it. Therefore, nobody knows on what conditions and what wages the employees of the railways "engaged in the operation of trains" are working; and nobody even knows exactly what employees are, in the sense of the law, "engaged in the operation of trains." The Adamson act has thrown all the relations, present and future, between the railways and large classes of their employees, into a condition of uncertainty.

It is not surprising that, when it became plain that the relations between the railways and their train service employees were drifting toward this state, negotiations were opened looking to a permanent settlement, the initiative being taken by the employees. Nor is it surprising that no agreement was reached. The employees demanded that, as a basis for a permanent accommodation, the railways should give them the "basic eight-hour day." This, in the sense in which the employees use it, means that the basis of a day's wage in freight service shall be made eight hours or less, 100 miles or less, instead of 10 hours or less, 100 miles or less, and that the present basis in passenger service shall remain unchanged. In other words, they cling to the mileage as well as the hourly basis of pay. It is believed, however, that if the Adamson act is a constitutional law, it has abolished the mileage basis. If so, the employees demanded more than the law gives them. The question was raised as to whether, as a compromise, they would accept a basis of 100 hours or less, 9 hours or less. After the switchmen's award was made, the question was raised as to whether the trainmen would accept the same basis that had been awarded to the switchmen—nine hours' pay for eight hours' work.

The companies had stood out for arbitration in dealing both with the switchmen and the trainmen. The former had accepted it, and had been given nine hours' pay for eight hours' work. The latter had rejected it, ordered a strike and finally got the Adamson act passed. For the railways, in these circumstances, unless under the compulsion of law, to grant the trainmen more than the switchmen had got by arbitration, would have been to have put an obvious premium on the methods which the trainmen have used. On the other hand, the leaders of the trainmen's brotherhoods could not well accept what the railroads offered because to have done so would have been to have admitted that with all their blustering, their threats, their strike order and their Adamson law the brotherhoods had been unable to gain any more than the switchmen had gained by the orderly and peaceful method of arbitration.

Not only was no agreement reached for a settlement of the present controversy, but none was reached for the settlement of future controversies. The scheme for the latter purpose favored by the brotherhoods apparently has been that a permanent board should be created by an Act of Congress, composed of four representatives of labor, four representatives of the railways and an umpire, to which should be referred all controversies between the railways and the train service employees. Such a board may possess great advantages as a means of settling labor disputes in purely private industries. It might have advantages as a body for settling many disputes which arise in the railway business, if established merely by the voluntary act of the parties. As a body to be established not only with the sanction but by the Act of Congress, it would be objectionable. It would be so for the obvious reason that it would be a body empowered to act for the public, upon which the public would have only one representative, while other interests would have eight.

Suppose that a body thus composed should award a large increase in wages. Would the Interstate Commerce Commission consider itself bound to treat the award as reasonable in regulating rates? If it did not, the railways might find their situation a very unhappy one. But probably the Interstate Commerce Commission would have to recognize, in regulating rates, any award that the proposed wage board should make. The proposed board, like the commission itself, would be created by and receive its duties and powers from Congress. How, then, could the commission question, much less deny, the reasonableness of any award that the wage board might make? But is it desirable to commit to a board composed of four representatives of the railways, four representatives of the labor brotherhoods, and only one representative of the public, the power to make wage awards which will be binding on the Interstate Commerce Commission, and which must, therefore, become a most important factor in its regulation of rates?

The public treats the railway business as quasi public in dealing with rates and service. It should treat it similarly in dealing with labor controversies. Any board to which is given the power by law to make awards in labor disputes, or merely to investigate and make recommendations, should have a membership a clear majority of which would represent the public.

An attempt apparently has been made to give Congress and the public the impression that the brotherhoods and the railways are about to agree on some scheme for settling their controversies, and that, therefore, no legislation by Congress involving the principle of prohibition of strikes, at least until after investigation of the matters in dispute, is needed. As a matter of fact, the possibility of any agreement being reached between the railways and the brotherhoods is so remote as not to be worth considering. The need of legislation to prevent strikes is just as great now as it ever was. Congress, in failing to recognize this fact and act accordingly, is pursuing the same course, which resulted in the

acute strike crisis of last September. So long as the Adamson act is in litigation there will be no serious strike, but unless Congress awakens and does something, the public probably will awaken, as soon as the decision regarding the Adamson act is rendered, to find that it is again confronted with the immediate danger of a nation-wide railway strike.

The *Railway Age Gazette* gave similar warning repeatedly regarding the approach of the crisis of last September; and it was ignored in Washington. Certain distinguished statesmen (conspicuous among whom was the one who subsequently wrote the Adamson act) gave solemn assurances that they knew that there would be no strike. Is official Washington going to let history repeat itself?

### SCHEDULES FOR EXTRA TRAINS

READERS interested in train operation will have noticed in the report of the butting collision on the Western Maryland at Knobmount, W. Va., printed in the *Railway Age Gazette* December 1, page 1008, that the government investigator, H. W. Belnap, censured the road for not having issued a schedule for the eastbound extra passenger train. "Had such an order been used," says Mr. Belnap, "a much greater degree of protection would have been afforded."

There are a good many railway officers who believe that this schedule form (Form G 3) ought never to be used, and who, therefore, would not agree with Mr. Belnap's conclusion. They would not, perhaps, claim that it was definitely dangerous in this particular case, if used with care; but, holding that it is an improper form, they would necessarily disapprove its use at any time or any place; and they would look elsewhere for the remedy for this particular blunder. The reader of this report has no difficulty in locating the fault, aside from any question of whether Form G 3 ought to have been used; and many will believe that no collision would have occurred if Order No. 22 had ended with the word "speed." If the despatcher had not said where the higher speed was permissible, the engineman would have had to decide this question for himself, and he would have bethought himself on entering the yard limits.

However, that does not settle the question of Form G 3. The American Railway Association has definitely disapproved this form, by cutting it out of the standard code, as will be seen by an examination of the latest revision of that code. On the other hand, there are experienced despatchers who deem the form not only useful, but an important element in smooth train operation; and a letter from one such, W. E. Watts, of the Santa Fe, is printed in another column. (This letter was received some weeks since, before the Knobmount case was heard of, but has been held out of the paper because of lack of space.) Mr. Watts sets forth his reasons with much force. On the other hand, the members of the A. R. A. committee justify their rejection of the form on the ground that many despatchers have misused it. Just how it was misused is not stated, but we understand that the trouble in most cases was of the same general nature as that on the Western Maryland—failure to see that the rights of the extra within yard limits were well safeguarded.

It may fairly be said that the two clauses—that in the Western Maryland order directing the use of passenger speed, and that in Form G 3 "with right over all trains"—would have about the same effect on the mind of an engineman. The use of this last mentioned clause does not alter the fact that the train is an extra, with no right to run full speed within yard limits; but it is easy to make it seem as though it did give such right. At all events, no careful despatcher could use Form G 3 without seeing that all of his yard engines as well as all extras (and all regular trains) had copies of the order; and it can well be imagined that on a busy district, with many yards, this might make the form cost more in labor and time than its benefits would be worth.

With superintendents and despatchers who aim to ac-

compish the best possible all-around train movement, there is one passage in Mr. Watts' letter which will arouse indignation—that where he refers to schedules of speed, which have been distorted to fit schedules of pay. It would seem that those recent correspondents of the *Railway Age Gazette* who have told of the wasteful train arrangements which have been made to please avaricious grievance committees have not by any means exhausted their subject. And we heard recently of a superintendent who did an equally unwise thing to *displease* the grievers; he extended the limits of a yard five or six miles so as to avoid paying road-train wages for a large number of very short runs. That was all right, so far as wages-rates were concerned; but, a rule requiring trains to run for five miles under control all the time is a strong temptation to enginemen to exercise their own "judgment" as to speed, and thereby get into trouble. Any move, reasonable or unreasonable, by which it is possible to thwart the monumental claims made by the brotherhoods in their effort to get big pay for little work, tends to enlist one's sympathy; but the employment, in train operation, of any principles inconsistent with the primary principles of safety and celerity is likely always to involve risk.

The foregoing notes do not exhaust the subject of Form G 3; there was no intention of doing so. These few salient features of the question are recounted for the benefit of those with whom, because of choice or of necessity, these matters are of special interest. The *Railway Age Gazette*, of course, would cut the whole big knot of questions by substituting for these train despatching perplexities the absolute block system.

### UNION PACIFIC

NOTHING could emphasize the modesty of an extra dividend of 2 per cent on Union Pacific common stock more strikingly than a study of the results—both financial and operating—obtained in the fiscal year ended June 30, 1916. For the first time the property earned over \$100,000,000. The ratio of expenses to operating revenues was reduced from 60 per cent to 56 per cent, notwithstanding an average ton-mile rate which was lower in 1916 than in 1915 by 8.6 per cent, and a passenger-mile rate which was lower in 1916 than in 1915 by 3.3 per cent. The average trainload passed the 600-ton mark. Net income, after the payment of preferred dividends, was equal to 15.65 per cent on the outstanding \$222,293,000 common stock. Dividends of 8 per cent were paid on the common, so that almost as much profit was devoted to additional investment in the property as was distributed to stockholders. The final details of the sale of Southern Pacific stock were completed and the profit on this transaction—a little over \$16,000,000—was transferred to profit and loss, making a total credit balance to profit and loss at the end of 1916 of \$124,177,000.

The explanation in the annual report of the great increase in revenues in 1916 over 1915 is that "this extraordinary increase is due to the business revival affecting all lines of traffic which set in in our territory about October 1, 1915, and the curtailment of shipping through Pacific Coast ports to Europe and our Atlantic ports on account of the withdrawal of ships to more profitable lines as the result of the European war and the closing of the Panama Canal." The explanation of why the Union Pacific was able to get such a large share of this increase in business and how the company was able to handle it so economically would be an exposition of the fundamental principles of all branches of railroad science. Summed up in two words, however, the reason why the Union Pacific could get the business was because of traffic connections and service; and likewise summed up in two words, the reason why the business could be handled so economically is that the Union Pacific has the necessary plant and organization.

Total operating revenues in the fiscal year 1916 amounted

to \$104,717,000, an increase of \$17,759,000 over 1915, and comparing with \$93,638,000 revenues in 1913, the largest earnings in any previous year. Operating expenses amounted to \$58,583,000, an increase of \$6,446,000, and of this increase only \$2,744,000 was in transportation expenses. A large part of the increased freight traffic was long haul business, which carried a lower ton-mile rate, the total tonnage of freight carried being 19,867,000 in 1916, an increase over 1915 of 18.3 per cent; but the ton mileage totaled 8,244,000,000, an increase of 37.4 per cent over 1915. The number of passengers carried one mile totaled 918,000,000, an increase of 10 per cent over 1915. With these increases of 37 per cent and 10 per cent in units of service performed there was an increase of only 12 per cent in the out of pocket cost of handling the business. Transportation expenses in 1916 amounted to \$25,660,000, or only \$2,744,000 more than the transportation expenses of 1915.

The good showing made in transportation expenses was helped by better balanced traffic, the percentage of loaded to total car mileage being 71.83 in 1916 and 68.41 in 1915. Heavier car loading was also a factor, the average tons per loaded car being 23.75 as against 22.40, an increase of 6 per cent. Lower costs per ton of fuel also helped. The average cost per ton of coal in 1916 was \$1.93, and in 1915 \$1.96, and the average cost of fuel oil in 1916 was \$2.94 a ton, and in 1915 \$3.23 a ton. The miles run per unit of fuel consumed, as shown in the 1916 and 1915 annual reports are not comparable because the proportion of passenger locomotive mileage to freight locomotive mileage has materially changed. The average trainload of revenue freight in 1916 was 608 tons, and in 1915, 555 tons. With the exception of 8 locomotives rebuilt in the company's shops, no new locomotives were added and 58 were retired. The actual mileage, excluding constructive mileage, per locomotive in 1916 was 27,885.

In 1916 the Union Pacific spent \$13,869,000 for maintenance of way, an increase of \$2,982,000 over the previous year, and \$12,389,000 for maintenance of equipment, an increase of only \$301,000. The total locomotive mileage in transportation service was 41,084,000 in 1916, an increase of 13.8 per cent. The increase in freight car mileage was 21.5 per cent, and in passenger car mileage 7.2 per cent. The following table shows the average costs of repairs per unit of equipment, exclusive of overhead, depreciation and retirements:

	1916	1915
Locomotives .....	\$3,112	\$3,065
Passenger cars .....	735	740
Freight cars .....	63	62

Measured on the mileage basis, repairs of locomotives cost 11.16 cents in 1916 and 12.57 cents in 1915. At the beginning of the year 37.86 per cent of locomotives were in thorough order, 18.49 per cent were in need of repairs and 8.13 per cent in shops, the remainder being in good order. At the end of the year 35.48 per cent were in thorough order, 13.70 per cent needing repairs and 9.23 per cent in shops. As previously mentioned, 58 locomotives were retired from service. There were also 66 passenger cars retired from service and 2,087 freight cars.

It is interesting to note the value of the salvage. The salvage on the 58 locomotives amounted to \$199,000, or nearly 30 per cent of the original cost of the locomotives; on the 66 passenger cars, salvage amounted to \$54,000, or nearly 10 per cent of the original cost, and on the freight cars, to \$254,000, or about 25 per cent of the original cost.

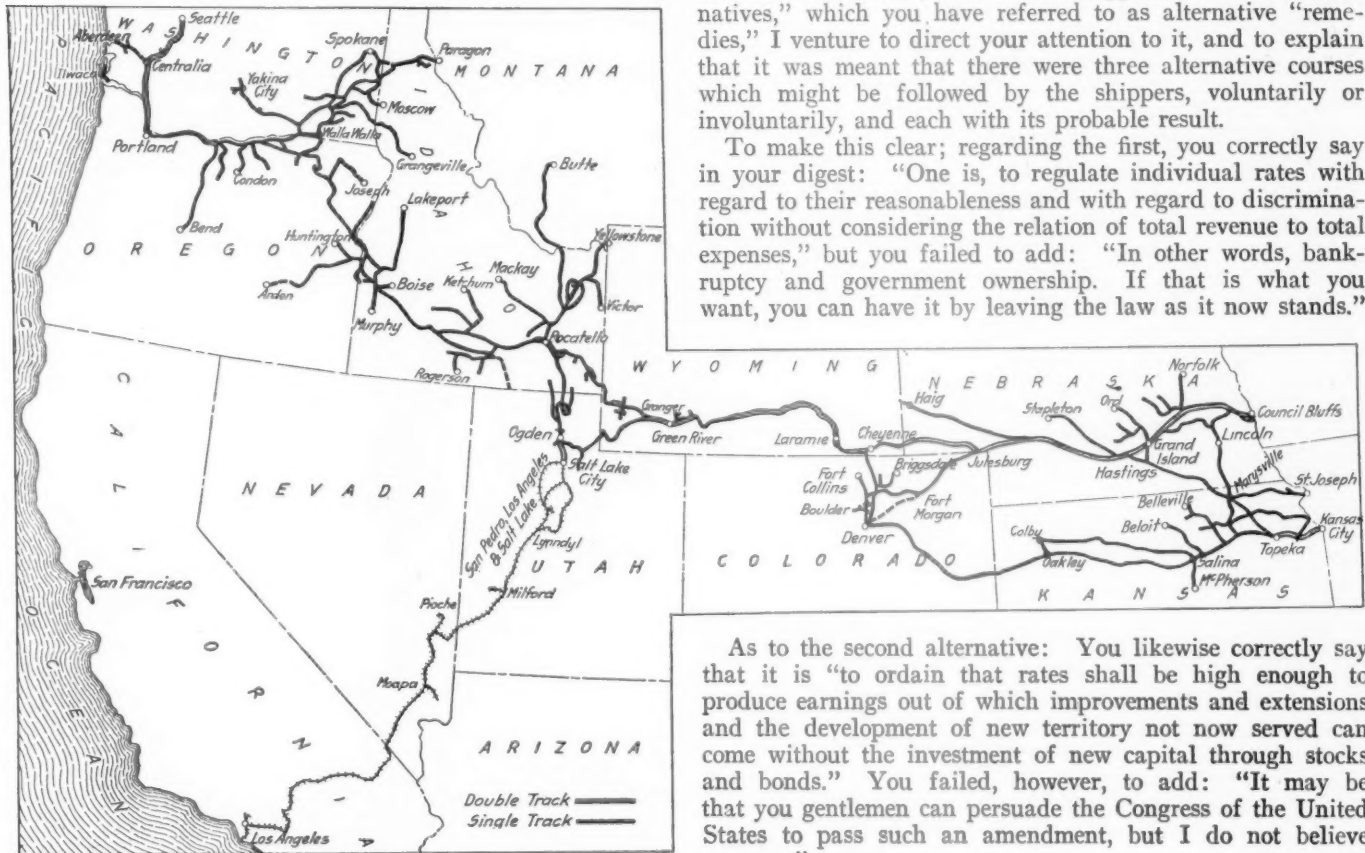
The large increases in amount spent for maintenance of way are the result of an increased amount of rail renewal, an increase in track maintenance and applying track material, an increase in cost of ties for renewals, and of other track material, and increases in nearly all other items in maintenance of way expenses. The amount spent for rails, exclusive of the cost of putting them into track, was \$1,161,000 in 1916 as against \$561,000 in 1915, but the miles of



new rails laid in 1916 was only 443 as compared with 408 in 1915.

No new financing was done during the year by the Union Pacific, but through the exchange of sterling bonds which had been issued under the first lien and refunding mortgage of the Union Pacific and first and refunding mortgage of the Oregon-Washington Railroad & Navigation Company for dollar bonds at the rate of £200 bond, plus \$30 in cash for a \$1,000 bond, the Union Pacific received \$634,000 cash, the face amount of dollar bonds issued for sterling bonds being \$21,119,500. There was \$1,111,000 spent for extensions and branches, the largest single expenditure being on the Vale (Ore.) line; \$4,172,000 for additions and betterments to roadway and track, the two largest items being \$933,000 for additional main track and \$773,000 for increased weight of rail, improved frogs, etc.; and \$673,000 for additions and betterments to equipment.

At the end of the year the Union Pacific had \$12,234,000



The Union Pacific

cash and \$11,500,000 time deposits, with total current liabilities of \$31,461,000, which included \$5,431,000 due to affiliated companies and \$6,437,000 dividends declared but not payable until October 2.

The following table shows the principal figures for operation in 1916 as compared with 1915:

	1916	1915
Average mileage operated .....	7,918	7,784
Freight revenue .....	\$75,078,755	\$59,191,109
Passenger revenue .....	19,941,890	18,748,559
Total operating revenue .....	104,717,005	86,958,295
Maintenance of way and structures .....	13,869,369	10,887,308
Maintenance of equipment .....	12,388,810	12,087,377
Traffic expenses .....	2,261,922	2,063,499
Transportation expenses .....	25,660,248	22,916,598
General expenses .....	2,891,805	2,883,296
Total operating expenses .....	58,582,770	52,136,715
Taxes .....	5,310,698	4,641,474
Operating income .....	40,823,537	30,180,106
Gross income .....	54,127,380	43,483,268
Net income .....	38,789,134	28,404,359
Dividends .....	21,765,068	21,765,068
Appropriated for additions and betterments .....	3,524,489	1,083,459
Surplus .....	13,487,950	5,544,032

## Letters to the Editor

### SHIPPERS AND THE TRANSPORTATION PROBLEM

CHICAGO, ILL.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

In reading your digest of the addresses presented at the recent transportation conference at Evansville, Ind., in the issue of December 22, page 1145, I note that in your recounting of the substance of my address on the relation of the shippers to the transportation problem, the last paragraph is so quoted as to convey an erroneous impression to the reader. Inasmuch as this paragraph, following a broad outline of conditions, constituted a suggestion of three "alternatives," which you have referred to as alternative "remedies," I venture to direct your attention to it, and to explain that it was meant that there were three alternative courses which might be followed by the shippers, voluntarily or involuntarily, and each with its probable result.

To make this clear; regarding the first, you correctly say in your digest: "One is, to regulate individual rates with regard to their reasonableness and with regard to discrimination without considering the relation of total revenue to total expenses," but you failed to add: "In other words, bankruptcy and government ownership. If that is what you want, you can have it by leaving the law as it now stands."

As to the second alternative: You likewise correctly say that it is "to ordain that rates shall be high enough to produce earnings out of which improvements and extensions and the development of new territory not now served can come without the investment of new capital through stocks and bonds." You failed, however, to add: "It may be that you gentlemen can persuade the Congress of the United States to pass such an amendment, but I do not believe you can."

The third alternative is to lay down the rule that such a rate structure shall be permitted in every large region that on the average of all the roads traversing that region, and on the average over a period of years, earnings shall be sufficient to attract investment for additions and betterments to existing lines, and for construction of new mileage.

E. B. LEIGH.

### USEFULNESS OF FORM G 3

WINSLOW, ARIZ.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

The last revision of the Standard Code of Train Rules adopted by the American Railway Association at Chicago in November, 1915, eliminated Example 3 of Form G, which provided for running an extra train on a schedule. Several members of the association approve of this action; but certain others are not so ready to give up this useful form.

The absence of this form may not be felt by eastern lines, mostly double tracked, and moving trains by time table

schedules or in sections; but on western roads this is one of our most important forms. The majority of western lines find it a most convenient order. Nearly all freight trains are run as extras both ways, or at least all one way. The time-table schedules for freight trains on the trans-continental lines as a rule are strung more or less loosely, the times at terminals being the arbitraries upon which the allowance for a division or sub-division is based, and the time between terminals being so slow that it is not practicable to run the trains on time. As a consequence the practice of handling everything as extra has become quite universal; local conditions generally governing as to which direction shall be chosen. Where trains move out of the terminals promptly on the calls, it is one of the best ways to handle trains on single track, giving the extra right over opposing freight trains; making the schedule what *that* engine can make with *that* tonnage. It is common to make the time a little slow here or a little tighter there, making proper allowances for fuel and water stops, and stringing it in the best practicable way for meeting or passing points with first class trains. Especially is it the best way to handle freight trains where telegraph or telephone offices are far apart.

As a rule you can handle more trains, easier and with less delay to each individual train with time orders, than where opposing extras must be handled on meets—unless you have telegraph or telephone offices at every other siding. Where Form 31 must be used to restrict a train it is an especially desirable form of order to use. If Form 19 may be used to restrict a train, the trains can be handled to tolerably good advantage on meet orders. Of course, a train running on a G-3 schedule may be delayed getting out of a terminal, or may be seriously delayed on the road, and opposing inferior trains may "get in the dark" and suffer a like amount of delay; but might they not suffer this delay even when they held a meet with the superior extra?

The schedules of pay for trainmen and enginemen on some of our railroads are based on the time-table schedules of trains, and it is found necessary to string a 10-hour schedule, or even longer, over a sub-division where a train can readily make the usual run in five, six or seven hours; and it is not economical, or practicable, to schedule trains that fast over the district, on the time table, for overtime would start, for example, after six hours, if they were carded six hours. But if run extra this train might be scheduled six hours by train order and make the run easily within that time. And if it were delayed it would receive overtime only according to the schedule of pay for an extra train on that district, usually the average time of all the time-table schedules in that direction. Perhaps, in this instance, for example, one train may be carded 8 hours, and another train 10 hours over the same district, making the "average" (on which pay for an extra might be based) 9 hours.

A writer in a recent issue of the *Railway Age Gazette* shouts with joy at the elimination of the form of order in question, and remarks that "everybody is glad to see it go . . . it takes up too much of the despatcher's time to put out such a schedule." I disagree. It is one of the best forms of orders that we have ever had. It is as safe as any order can be. Any experienced despatcher must know that it will make work easier for himself as well as for the trains on the road. It takes but a few minutes to put out such an order, scheduling a train over an entire district, and after it is out he can "let 'em ride." Certain lines have a printed schedule form for each district, and all that is necessary to fill in is (a) the number of the engine, or engines, (b) the particular train or trains over which they have right, and (c) figures for the time at stations. The printed form is entirely safe in these days of up-to-date printing. Printed and ruled train order forms can register line for line as closely and as well as any other kind of printing, and the printed

form with names of stations is far more legible than the average operator's handwriting.

If we must discard this old and long-tryed friend, some provision should be made in the code to authorize the practice of putting a time-table scheduled train, or section, on a "string of waits" across a sub-division and then allow a run-late to be put out on that string of waits in case the train running on such order gets delayed. Thus it would be possible to avoid the necessity of putting out an entire new string of waits. Under the standard code we are not authorized to use a run-late on a "string of waits." Under the old rules with the scheduled extra (Form G-3), we were authorized to give such extra an order to run late on its schedule order, or, if desired, to issue a wait order in addition (See form E). It takes but a minute to put out a run-late, but considerable time is taken up if it becomes necessary to issue a new "wait" order across a district for the same train several times.

Western roads run many special passenger trains, and it is not always practicable to run them as a section of a first class train. It is not practicable to handle such special train as a section of some first class train 10 or 11 hours late. No despatcher would think of handling such a train as a second or third class train, or a section of such train. Transcontinental passenger trains are in many instances bunched comparatively close together or all one way within a period of 12 hours, on account of connections, making an interval, in some cases, of as much as 12 hours between the last of the fleet and the time the next one is due in the same direction. In such cases the schedule-extra is a most important and useful form of order.

By all means let us retain example 3, Form G.

W. E. WATTS,  
Despatcher, A. T. & S. F. Ry.

## ANYBODY CAN KICK A RAILROAD

SPRINGFIELD, Va.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:—

I have read with interest the editorial entitled "Anybody Can Kick a Railroad." It never seems to occur to the railroads and their apologists that the attitude of the public to the railroads is due in any way to the attitude or dealings of the railroads with the public. It is so much easier to attribute it to the public's innate cussedness than to find the real reason, which, nine times out of ten, will be the conduct of the railroad itself. Although it isn't popular to mention it, there is still something of the old "public be damned" spirit among railroad officers, and their dilatory and evasive practices in dealing with property owners along their lines are peculiarly irritating and are the source of much of their unpopularity. The public is composed of individuals, and, like those individuals, it is apt to mete out to others the treatment it receives from them.

E. R. WHITE.

FOOD BOXES ON THE LONDON & NORTH-WESTERN.—The London & North-Western Railway Company has been approached by the Dudley Chamber of Commerce with the view of securing the reinstatement of a breakfast car on the morning train to London and a dining car on the return train in the evening. The company replied that it was unable to comply with the suggestion; and the Dudley Chamber then asked that something more satisfactory than the usual luncheon baskets might be served on the trains to London, and specimen samples of cold viands put up in convenient cardboard boxes were submitted as illustrative of what might be done. This idea apparently met with favorable consideration by the railway company, and arrangements have been made for light breakfasts, luncheons and dinners, to be served in cardboard boxes at Euston and New Street (Birmingham) stations, respectively.—*Railway Gazette, London.*

# Timber Protection Methods on the Santa Fe

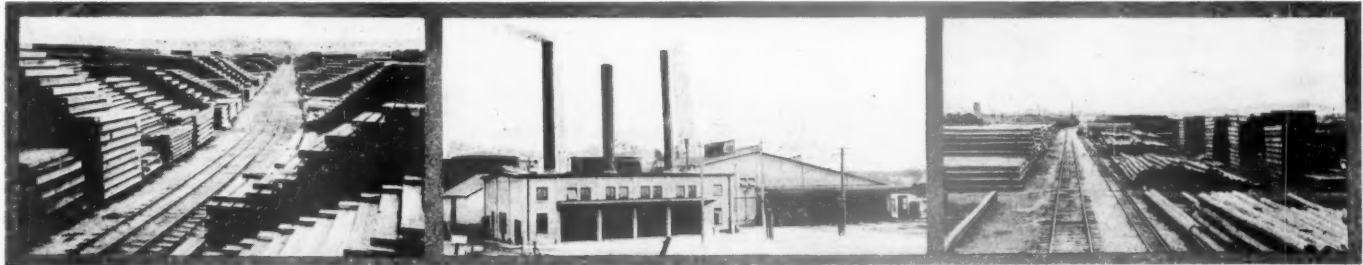
## A Description of the Methods by Which the Tie Requirements of This Line Have Been Reduced 650,000

**A** REDUCTION of over 650,000 in the annual cross tie requirements for the last three years as compared with the demand on an equivalent mileage ten years ago is the unusual record which has been made on the Atchison, Topeka & Santa Fe proper. The annual renewals per mile of track for the three years 1913-1915 inclusive were 191 as compared with 261 for the same period ten years previous. They decreased to 179 in 1914, and this figure would have been duplicated in 1915 had it not been necessary to renew 1,000 ties per mile of track on a road purchased that year to bring it up to the Santa Fe standard of maintenance. This reduction is equivalent to a saving of over \$700,000 annually in the purchase and installation of ties alone. The full significance of the record now being made may be realized from a comparison with the average of 336 ties renewed per mile of track in all tracks in the United States as reported by the United States Census Bureau for 1911, the latest report available.

This record is all the more striking when it is considered that the ton mileage per mile of track has increased materially in this period. During this same interval the class of timber available for ties has deteriorated. The Santa Fe does not have access to the better grade of hardwood timbers and is

country. It has led in the experimental use of hard wood dowels in soft wood ties, while it is the standard practice to use tie plates on all ties and over 60,000,000 plates are now in service. It is through these and similar measures that the road has been enabled to secure an average life of approximately 15 years from its soft pine ties.

The Atchison, Topeka & Santa Fe system comprises over 11,300 miles of main lines with 16,350 miles of tracks extending from Chicago across the arid territory to the southwest to Los Angeles and San Francisco and south to Galveston and the humid timber territory of eastern Texas. In this way ties in the track are subjected to a wide variety of climatic conditions while the density of traffic and grade and curvature conditions vary as on other roads. Approximately 4,350,000 ties are required annually, including approximately 600,000 for new construction. All ties are purchased, inspected and held in stock by the stores department and all stock records, including those for timber at the treating plants are kept under the supervision of this department. Beyond this point the treatment, distribution and protection of the timber are under the direction of the manager of the treating plants who reports directly to the chief engineer of the system but who necessarily works also closely in co-opera-



Views of the Somerville Plant and Yard

forced to draw its supply of ties from the so-called inferior woods, the quality of which is deteriorating from year to year as the better grades of even this class of timber are becoming exhausted. The reduction in the tie consumption cannot be attributed to any policy of retrenchment for the expenditures for maintenance of way were well up to normal during this recent period and the track is in a better condition than ever before. The lines included in this comparison comprise the system east of Albuquerque and Belevu, N. Mex., and north of Purcell and Shawnee, Okla., with 7,291 miles of main and branch lines and 9,552 miles of all tracks. This portion of the system only has been considered in the figures given above as it is here that treated timber has been used most extensively and the results of the campaign of protection are most evident. However, the practices described below are in general being followed over the entire system including the Coast and the Gulf lines.

This saving is the result of a long continued policy of protection of the timber from decay and mechanical wear. The Santa Fe has been a pioneer in the preservation of ties, over 80 per cent of those in the parent lines and over 65 per cent of those on the entire system today being treated. It has also been a pioneer in the use of screw spikes, having more in track today than any other Western road and, with the exception of the Delaware, Lackawanna & Western, more than any other road in America. It has bored and adzed more ties than any other road in the West if not in the

tion with the stores department. An exception to this practice is made on the Coast Lines where few treated ties are used and where the distribution is made directly by the stores department.

### THE SEARCH FOR TIES

The Santa Fe was early forced to give attention to sources of tie supply, for its lines are located almost wholly in a sparsely timbered country which produces few ties. No high grade hard wood forests are contiguous to its lines and it has been forced to go to the soft inferior woods. At the present time the largest part of its tie supply is secured from the southern pine territory of eastern Texas and Louisiana adjacent to the Santa Fe lines east of Somerville, Tex., and approximately 2,000,000 hewn and 1,250,000 sawed ties are purchased here. Approximately 700,000 ties are also secured each year along the lines in New Mexico and Arizona in the vicinity of Albuquerque, N. Mex., while 100,000 are secured along the line of the St. Louis, Rocky Mountain & Pacific in northern New Mexico, recently acquired by the Santa Fe. Approximately one-half of the ties required on the Phoenix line, south of Flagstaff, Arizona and Cadiz are grown along these lines while the rest are of Douglas Fir shipped in from the Pacific northwest. Redwood and Port Orford cedar ties are inserted on the remainder of the Coast Lines.

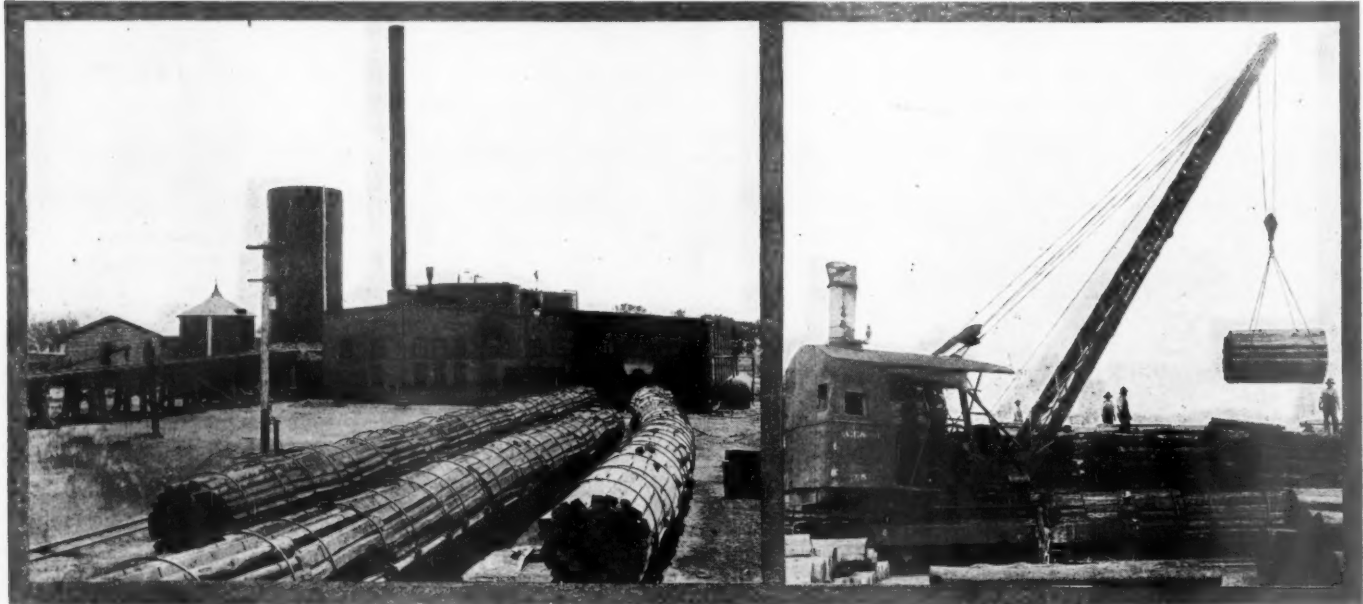
Since the only ties available are now being secured on the remote parts of the system, the Santa Fe has made extensive

investigations of the possibility of importing ties from foreign countries and also of protecting the ties in the track to secure the maximum life from them. As early as 1907 the manager of the tie and timber department spent eight months in a trip to the Hawaiian and Philippine islands, Japan, China, Australia, Manchuria and Korea to investigate possible timber supplies. On his way home he visited England, Germany and France where he studied the methods of preservation and mechanical protection employed on the leading European railways. Later a second representative was sent to make further study of the tie producing areas of Hawaii, Japan, Mexico, Venezuela and Cuba. Largely as a result of these investigations 6,000,000 ties were imported from Japan between 1906 and 1912, and were installed on the Coast Lines. About 700,000 Ohia ties have also been imported from Hawaii since 1908 and they are still being secured to the extent of about 125,000 annually, although the supply is limited and does not afford any hope of permanent supply. About 400,000 eucalyptus ties have also been purchased but the use of this timber has been discontinued, while approximately 16,000 hardwood ties were brought from Mexico. At the present time the possibilities of using the timbers of the Pacific northwest are being in-

Somerville, Tex., at the junction of the line tapping the tie producing territory of eastern Texas with the main line to Galveston. A three cylinder plant was built at this point by an outside corporation in 1897 and two more cylinders were added the following year. The plant was rebuilt with five cylinders in 1906 and was taken over by the Santa Fe Tie & Lumber Preserving Company, a subsidiary of the Santa Fe. Previous to 1906 it had been operated for about half the time by the Wellhouse process but since this date the Reuping process has been employed continuously except for a short time in 1915, when the plant was changed over to use zinc chloride because of the inability to secure creosote. In May, 1916, the plant was reconverted into a creosoting plant.

A two cylinder plant was built at Albuquerque, N. M., in 1907, at which the crude oil Reuping and Burnettizing processes have been used. On May 1, 1916, it was converted into a creosoting plant. This plant is convenient for the handling of ties originating on the lines north and south of Albuquerque as well as on the main line west through Arizona.

Both the Somerville and the Albuquerque plants are owned by the Santa Fe and are operated as company plants. About



Treating Plant at Albuquerque. Loading Ties With a Locomotive Crane

vestigated carefully and while these woods do not lend themselves to treatment readily, recent experimental modifications of the common methods of treatment give promise of making this timber available for use in large quantities, particularly as the foreign timbers have not proved satisfactory with the exception of the Ohia timber of Hawaii, the supply of which is limited.

#### TIMBER PRESERVATIVE FACILITIES

With this scarcity of tie timber it is not surprising that the Santa Fe was one of the first roads to investigate timber preservation and has today followed a consistent practice of treating ties continuously for a longer period than any other road in this country. The first plant was built at Las Vegas, N. M., in 1885, and consisted of two cylinders. It was operated as a zinc chloride plant until it was dismantled in 1908, employing the Wellhouse method for about two-thirds of this time. A two-cylinder plant was built at Bellemont, Ariz., in 1898, which was burned in 1906. During the time it was in operation piling was given a creosote treatment and ties zinc chloride, using the Wellhouse method.

The largest plant on the system is the one located at

250,000 ties are also treated annually at a commercial plant in southern Illinois, while the 100,000 ties secured along the line of the St. Louis, Rocky Mountain & Pacific in northern New Mexico are treated at a commercial plant at Cimarron, N. Mex. Considerable quantities of ties are now also being treated more or less experimentally at commercial plants in Oregon and Washington and over 60,000 ties have already been secured from this source. From 1900 to 1906 considerable quantities of piling were also treated at a commercial plant at Galveston, but this work is now all done at Somerville.

It has been the general policy of the Santa Fe to use treated ties exclusively on all lines east of Albuquerque since 1910, except on two divisions near the Gulf of Mexico where untreated cypress ties were used until two years ago, since which time treated ties have been inserted on these lines also. As a result over 80 per cent of the ties on the parent line and at least 60 per cent of those on the system are treated at the present time. The Albuquerque plant treats and distributes the ties as far east as Amarillo and Clovis, Tex., and Syracuse, Kansas, while the Somerville plant supplies the requirements of the Gulf lines and the Santa Fe proper east to

Marcelline, Mo., east of which point the ties are secured from the commercial plant in Illinois. Up to December 31, 1915, 47,421,248 ties, 208,859,463 ft. B.M. of timber and 8,103,410 lin. ft. of piling have been treated by the Santa Fe in its plant. In addition over 3,000,000 ties have been treated at commercial plants.

SEASONING THE TIMBER

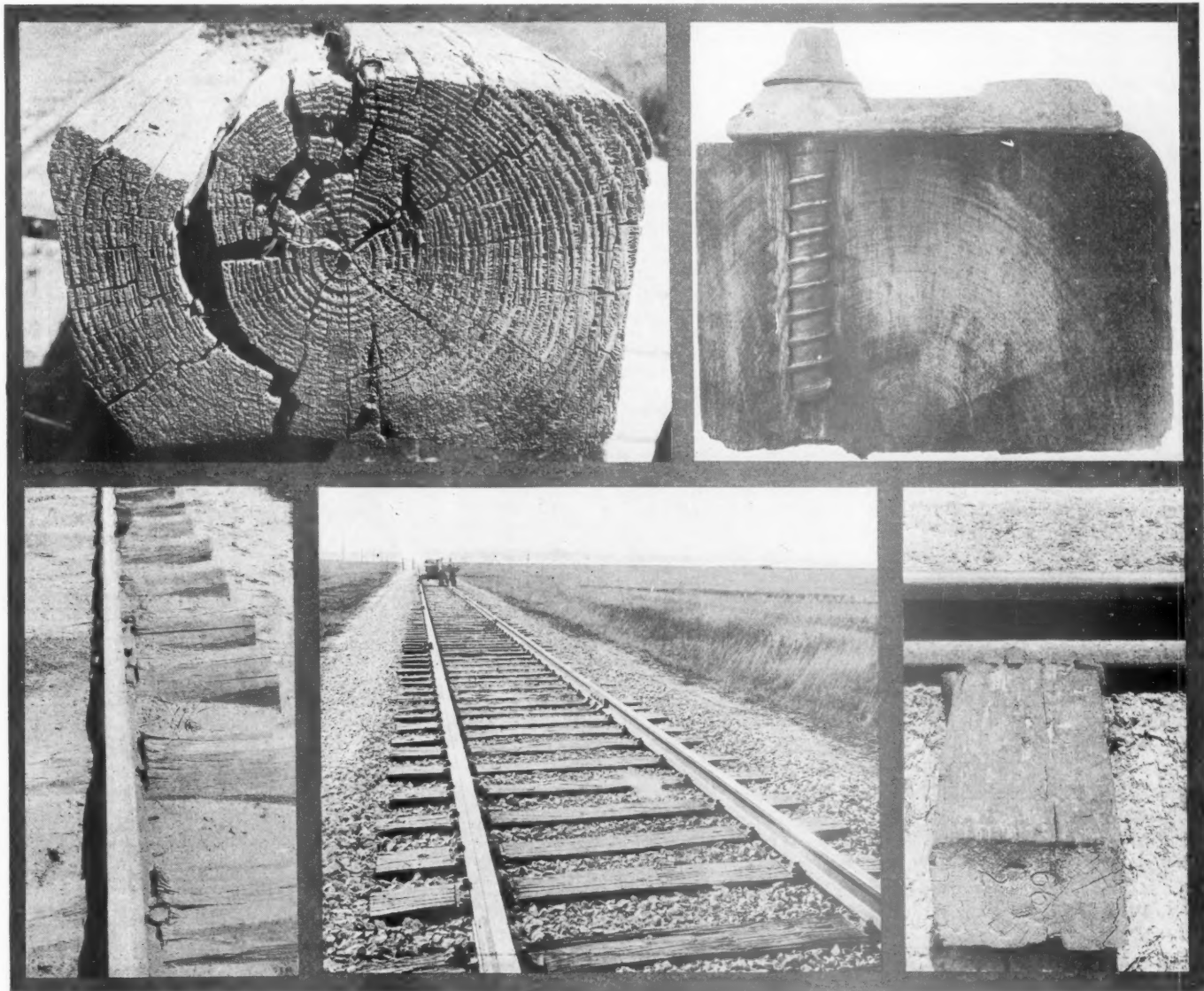
Preliminary to the treatment of the timber care is exercised to see that it reaches the plant in good condition. Conditions in the timber areas in eastern Texas are particularly conducive to the quick decay of ties and piling. On one line built in this territory a few years ago untreated ties began to come out of the track in eight months and all had been

shipped directly from the mill to the storage yard and are inspected there.

On arrival at the storage yard the timber is unloaded in a specially designated yard which is thoroughly drained and in which careful attention has been given to the cleaning up of refuse and timbers which might afford lodgment for decay which would spread to the freshly cut wood. Ordinarily about 1,250,000 ties are held in the yard at Somerville to season, oak ties being commonly seasoned 12 months, gum 5 months and pine from 3 to 4 months.

THE USE OF CUT-OFF SAWS

Until a few years ago it was felt that these precautions and the culling of all timber showing fungus were sufficient



End Section of Tie Destroyed by Spike Killing and Rail Cutting (Upper Left). Pine Tie Equipped With Hardwood Dowel and Screw Spike (Upper Right). Treated Ties Ruined by Rail Cutting Under Light Traffic in Six Years (Lower Left). Screw Spike Track Built in 1910 (Lower Center). Treated Long Leaf Pine Tie After 17 Years' Service (Lower Right).

removed in two years. For this reason, special precautions have been adopted to insure the prompt removal of the timber to the seasoning yard. All ties and piling are inspected and stenciled by the inspector while freshly cut, and when he cannot satisfy himself of this fact he does not accept the timber. Each piece of timber is marked with the month inspected and is stacked along the right of way in open piles from which it is moved to the treating plant as soon as possible but in all cases within three months. Sawed ties are

but it was found that this did not remove all decayed material. Later it was thought that the presence of black spots on the exterior of the timbers could be relied upon to indicate the presence of interior decay but again this was found to be incomplete. As the injection of preservatives into timber in which decay is already well advanced results not only in the loss of the money expended in the treatment but in the early removal of the timber itself and the condemnation of the treatment, two cut-off saws have been

installed at Somerville and one at Albuquerque by means of which  $\frac{1}{2}$  in. is sawed from each end of all ties other than oak, which are not subject to this form of interior decay. Likewise the ends are sawed off enough piling by hand before they are loaded on the tram cars for treatment to insure that the lot is sound, and where they run bad the ends are sawed off each stick. In this way the seals formed at the ends of the timber are removed and an opportunity is secured to ascertain that the timber within is sound before it is treated. These cut-off saws reveal an average of about three per cent of the ties with interior decay, about one-half of which can be used for seconds. All of the ties detected in this manner show no exterior signs of decay, have passed the inspectors and would otherwise be treated.

#### ALL TIES ADZED AND BORED

The Santa Fe has also been a pioneer in the use of adzing machines, purchasing the first two built in this country in 1910. These original machines were mounted in cars and, although worked continuously, their capacity was not equal to the output of the plant. Within the last two years two additional and more modern machines have been installed at Somerville and one at Albuquerque while one of the earlier machines has been sent to the Coast Lines to adz untreated ties before their insertion in the track. Thus at the present time all ties used east of Albuquerque are adzed before treatment, insuring a full bearing for the tie plates and decreasing the cutting of the wood fibres while the same is true of a large portion of those ties installed on the Coast lines.

All ties passing through the treating plant are also being bored for spikes while the machines going to the Coast Lines are equipped with the same attachment for boring untreated ties. A  $\frac{3}{8}$ -in. hole is bored through pine and a  $\frac{7}{16}$ -in. hole through oak ties.

The boring of these ties reduces the tearing of the wood materially while tests have shown the holding power of a spike to be as great in a bored as in an unbored tie. By boring a hole through the timber an opportunity is also provided for the oil to penetrate about the spike holes and under the tie plate where the tie needs protection the most. After being treated the ties are held in the yard to season as far as possible. While this requires an additional handling, storage along the line has been found to result frequently in the use of the ties before they have had an opportunity to season sufficiently.

#### OTHER TIMBER TREATED

In addition to ties all piling used east of Albuquerque is treated at Somerville, being given the full cell creosote treatment except where it is to be used for temporary work when it is given the Reuping treatment. Practically all of this piling is secured from eastern Texas, the annual requirements being about 1,000,000 lineal feet. All piling and lumber used on the Coast Lines is treated at commercial plants in the northwest.

In addition to ties and piling over 12,000,000 ft. B.M. of lumber is treated annually at Somerville for various maintenance of way purposes. The Santa Fe has been a pioneer in the use of creosoted ballast deck trestles, 2,006 such structures with an aggregate length of 217,784 ft. having been built since 1899. Including other structures to which this type of deck has been applied, the total length of ballast deck structures is 333,757 lin. ft. This form of construction is standard for use on main lines while creosoted open deck structures are built on branches. Large quantities of timber are also treated for crossing planks, stock pen posts, drain boxes and filler blocks for Weber joints. A small saw mill is provided at Somerville at which timbers are cut to dimensions before treatment and this practice is being increased.

As over 75 per cent of the ties now in track in the parent line are of the soft woods it is essential that they be protected from crushing and rail cutting if the full benefits are

to be secured from the treatment. As a result tie plates have been used in large quantities, over 60,000,000 now being in service. It has been the standard practice to use tie plates on all ties in main and branch lines and in side tracks alike since 1910, although this standard has not been adhered to in all cases. The standard tie plate is  $7\frac{1}{2}$  in. by 9 in. in area and  $\frac{1}{2}$  in. thick with two small ribs on the bottom. It is used with a chisel-pointed spike with a  $\frac{9}{16}$ -in. shank.

#### SCREW SPIKES AND DOWELS USED

Following the visit of the manager of the tie and timber department to France in 1907, the Santa Fe management became convinced of the desirability of protecting its ties more fully from mechanical destruction to give them a resistance against this form of deterioration equal to that against decay. As a result it undertook extensive experiments with screw spikes and now has about 375 miles of screw spike track in service. The first extensive installation was made on the Hutchinson-Kinsley cut-off in western Kansas in 1910, and consisted of 30 miles of track to which screw spikes were applied out of face and 25 miles on which

TIES INSERTED FOR RENEWALS IN MAIN AND BRANCH LINES AND MAIN AND SIDE TRACKS A.T. & S.F.RY.						
Year	Miles main track	Miles of all tracks	Total ties in tracks	Total inserted for Renewals	Percentage of total ties inserted to total ties in track	Ties inserted per mile
1896	2,671	5,405	16,401,792	1,867,441	11.39	346
1897	2,570	5,339	16,181,440	1,611,509	9.96	302
1898	2,569	5,356	16,236,000	1,254,936	7.73	234
1899	2,688	6,171	18,585,952	1,290,282	6.94	209
1900	2,470	5,856	17,637,312	1,187,958	6.74	203
1901	2,469	5,900	17,759,456	1,075,041	6.05	182
1902	2,470	5,981	18,003,040	1,369,140	7.61	229
1903	2,654	6,135	18,524,352	1,470,286	7.94	240
1904	2,793	6,379	19,266,720	1,751,095	9.09	275
1905	3,306	6,989	21,164,932	1,869,233	8.83	267
1906	3,682	7,467	22,593,360	1,159,219	5.11	155
1907	3,545	7,427	22,522,324	2,067,651	9.18	278
1908	3,686	7,712	23,355,824	2,304,347	9.87	299
1909	3,714	8,041	24,391,488	2,355,540	9.66	293
1910	3,824	8,563	27,294,336	2,352,184	8.62	275
1911	3,698	8,872	28,270,420	2,335,796	8.26	263
1912	3,589	9,043	28,810,592	2,074,492	7.20	229
1913	3,679	9,168	29,208,992	1,818,205	6.22	198
1914	3,678	9,568	30,481,120	1,714,102	5.62	179
1915	3,676	9,552	30,422,416	1,879,897	6.18	197

#### Tie Requirements by Years

they were inserted in ties spotted in. All of these sections are still giving excellent service. Other large installations have been made on new second track constructed four or five years ago on the Coast Lines where large numbers of screw spikes were inserted in Japanese oak ties. The present practice on the western lines of the parent system is to insert eight screw spikes per panel in heavy tie renewals to strengthen the track.

A further step along this line has been the insertion of hard wood dowels in soft wood ties, thereby securing hard wood ties as far as their resistance to spike killing is concerned. These dowels were applied to approximately 15,000 ties inserted in the screw spike track between Hutchinson and Kinsley in 1910, all of which are giving satisfactory service. The management has given authority recently to apply 200,000 additional treated dowels to 50,000 new ties and this work is now in progress. These dowels are being placed in loblolly pine, redwood, and cedar ties, all of which are timbers which otherwise offer a limited resistance to spike killing. It is estimated that the application of these dowels will cost 14 cents per tie, although in larger quantities it is expected that they can be reduced to 10 cents per tie. These

various measures are being adopted since the problem still is to protect the ties against mechanical abuse. At the present time only five pounds of oil is left in timber but if full protection could be secured against mechanical wear they could be given a seven-pound treatment and the resistance to decay increased still further.

#### DISTRIBUTION OF THE MATERIALS

In a system the size of the Santa Fe there is certain to be a wide variation in the climatic, traffic and other service conditions to which the ties are subjected. For this reason, the distribution of the ties over the different lines is receiving close attention, and the following regulations of recent enactment are now in effect. On main line curves of 3 deg. and over only oak and long leaf pine ties are used; while long leaf pine ties are used on main line tangents and curves up to 3 deg.; loblolly pine ties are used on branch lines and second class ties in side and passing tracks. In placing requisitions with the treating plants the store department gives the character of the track in which the ties are to be used and the weight of rail for which they are to be bored. To have ties available for use as needed at points nearer than Somerville and Albuquerque intermediate storage yards have recently been established at several points on the system from which hurried orders for ties from the different divisions can be filled. A considerable quantity of lumber is also held in stock at such a yard at Arkansas City, Kan.

An important feature of the work of the timber preservation department has been the undertaking of a campaign of education to impress upon those using timber the importance of handling it properly to avoid the unnecessary cutting of the treated surfaces, thus rendering the preservative ineffective. For this purpose liberal use has been made of photographs and all instances of abuse which have been detected have been followed down. In many instances relief has been secured by correspondence direct with the parties at fault. Opportunity has also been taken to present this subject to groups of employees at division headquarters, etc.

#### COLLECTION OF SERVICE STATISTICS

With the care which is being taken to protect the ties from attack by agents of decay and mechanical wear, it is essential that accurate information be compiled showing the extent to which this is successful.

One section of track has been selected on each division superintendent's territory over the system, typical of conditions on that division and accurate records are collected. Twenty-five such test sections, aggregating about 150 miles of track are under observation. These sections were not re-tied out of face but a careful record has been kept of each tie inserted under normal service conditions and all removals studied to determine the cause. It is required that all ties taken out of these sections, the limits of which correspond with those of the section foremen, be held for inspection by representatives from the office of the manager of treating plants before being destroyed. In addition a detailed inspection of all ties in these special test sections is made annually by inspectors working under the direction of the assistant to the manager of treating plants having charge of experimental sections. These inspectors also detect irregular or inaccurate reports and by their close supervision secure an accurate record. To show what the test sections are accomplishing a summarized report is made annually to the manager of treating plants.

All reported failures of treated materials including piling are investigated by inspectors of the timber preservation department who make special trips to locations of these failures if necessary. As a result of this practice, it has been found that many such reported failures have resulted from other causes and frequently it has been found that the timber in question has never been treated. In addition to correcting

the records in this way, information is secured first hand regarding failures of treated timber correctly reported which is of service in correcting defective practices and in detecting new forms of failure.

Thus although over 75 per cent of the ties inserted in the track during the last 10 years are of the soft pine timbers, principally loblolly pine, which does not last over 4 years untreated, an average life of over 15 years is now being secured and the normal renewal per mile of track has fallen to considerably less than 200 as compared with 336 for the country as a whole. As a concrete example of what is being accomplished a section of track 66 miles long on the Emporia cut-off laid out of face with new ties in 1906, was relaid with new rail in 1914 without renewing a single tie. In another section in Illinois laid with pine ties treated and inserted in 1904, the only ones removed to date have been those which have been taken out for exhibit. Instead of the annual requirements being reduced by 650,000, it is confidently expected that this reduction will be increased by 150,000 more when the entire lines are provided with treated ties.

We are indebted to George E. Rex, manager of treating plants, for the opportunity to secure the information obtained in the above article.

#### ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS

The winter meeting of the Association of Transportation and Car Accounting Officers was held at Atlanta, Ga., December 12 and 13, with 103 members in attendance, and President J. W. Nowers in the chair. F. M. Luce, who has been treasurer of the association since its organization in 1904, was relieved, at his own request, and J. E. Fairbanks was elected to fill the vacancy.

The Committee on Car Service presented an elaborate report recommending a plan for inducing and supervising the intensive loading of freight cars. The plan contemplates:

First: The appointment by each railroad of a special representative to supervise car loading on its line;

Second: The compilation of statistics in a form which will permit of intelligent analysis.

As an initial recommendation, the committee suggests that members of the association utilize the following method beginning with the month of January, 1917:

(a) If not already provided, publish a schedule of l. c. l. loading classifications for the larger stations; also prepare general instructions covering the loading of l. c. l. freight, including therein the basis rules appearing in Exhibit "C."  
 (b) Arrange for supervision of l. c. l. loading, with a view to preparing an exhibit of the present average pounds per car being loaded at the various stations, using the blank forms herewith submitted. Exhibit "D" to be used by agents for reporting daily. Exhibit "E" to be used in the general office for compiling monthly figures. Exhibit "F" to show the loading of l. c. l. freight on each division according to stations, stations to be listed according to their rank of precedence. Exhibit "G" shows the loading on the entire system according to stations, and according to their rank. Exhibit "H" is for compiling statistics showing total forwarded on each division. Exhibit "I" for reporting to the secretary of the Association of Transportation and Car Accounting officers.

(c) Having thus obtained data exhibiting the present loading, arrange for close systematic supervision with the purpose of consolidating classifications where practicable, thus using in many instances one car where two were formerly used. Analyze carefully the loading to transfer stations, making such modifications in that loading as may seem practicable and will tend to a greater average pounds per car.

(d) Following the adoption of the foregoing, continue to

supervise loading and compile monthly reports, sending to the secretary of the association at the end of each month the data requested on Exhibit "I."

#### CARLOAD FREIGHT.

Each road to compile statistics showing the average weight of loading per car loaded at each station, separated as to commodities, with detailed data showing the marked capacity, pounds and cubical capacity of each car. These statistics to be compiled for each station, for each division, and for the system. The form, as compiled by the agent, will contain the name of the consignor so that, in the event of the statistics developing a lack of uniformity in the loading of a certain commodity at one station as compared with another, or if a station shows a decrease in the average weight per car of the same commodity compared with other stations on the division or system, the data available will permit of comparing. The committee recommends the compilation of data for carload freight in the same general way as for l. c. l. freight, and especially for the principal commodities, namely:

Corn	Anthracite Coal (in box cars)	Sheet Metal
Wheat	Bituminous Coal (in open cars)	Tin Plate
Oats	Bituminous Coal (in box cars)	Cement
Flour	Bituminous Coal (in open cars)	Brick (in box cars)
Barley	Coke	Brick (in open cars)
Hay and Straw	Stone	Lime
Cotton (compressed)	Salt	Structural Steel
Sugar	Lumber (in open cars)	Steel Shapes
Wool	Lumber (in box cars)	Oil in Barrels
Hides and Leather	Shingles	Wines, Liquors and Beers in Barrels.
Anthracite Coal (in open cars)	Bar Metal	

It is the opinion of the committee that statistics showing the journal capacity utilized would not prove whether a car is loaded to its cubical capacity. As the actual proof of this condition could be ascertained only by an inspection of every loaded car, and as this would be impracticable, it was decided that after receiving data showing the average pounds, separated as to commodities, loaded into cars, with data as to the average journal capacity and average cubical capacity of the cars utilized in such loading, tests should then be made of the average pounds separated as to particular commodities, which the car of the average cubical capacity (as shown by the statistics to have been used) will contain. From these tests the committee can determine approximately the average per cent of cubical and of journal capacity utilized by shippers in the loading of each particular commodity reported upon, as well as the potential loading (with respect to journal or cubical capacity) which carriers should endeavor to attain in their operations.

In connection with the loading of coal the committee recommends that railroads analyze the potential journal capacity of each of their classes of coal cars in its relation to the cubical capacity, assigning to each class of coal car equipment a definite prescribed tonnage. A formula which has been used for this purpose in connection with the loading of bituminous coal is attached (Exhibit "Q").

The committee believes that the statistics here recommended will produce (a) definite data as to the average loading in pounds per car, separated as to commodities; (b) comprehensive data showing the average marked capacity (pounds) of the average car loaded, separated as to commodities; (c) comprehensive data showing the average cubical capacity of cars loaded, separated as to commodities.

It is contemplated that tests will be made by a certain group of roads which the committee will select, with a view to ascertaining the average number of pounds of the commodities above set forth which may be placed in a car of the capacity shown by our statistics to have been used in such loading. Tests will also be made by these roads with reference to the relationship of the cubical capacity to the journal capacity in connection with commodities where the cubical capacity of the car is the limiting factor in loading. Having available statistics setting forth the average weight (per car) of each

commodity loaded in the United States, it will be a comparatively simple matter to determine the potential maximum for each commodity, provided proper tests are made to determine the limiting point of loading with respect to the factors of cubical and marked capacity of cars.

For instance, provided our statistics show that the average loading per car of a certain commodity is 40,000 pounds, whereas the journal capacity of the cars used in such traffic plus 10 per cent is shown as 70,000 pounds, this would indicate that only 57 per cent of the journal capacity was being utilized. The committee contemplates obtaining information as to the per cent of journal and of cubical capacity utilized by shippers, separated as to commodities, and ascertaining its relationship to the potential journal and cubical capacity.

These recommendations were adopted by the association and recommended the appointment by each railroad of a special representative to supervise car loading on each line, and the compilation of statistics, in accordance with the forms submitted.

The general instructions formulated by the committee call upon agents to make every effort to load cars with l. c. l. freight to the full cubical capacity of the car; and give illustrations of exceptions to this rule, such, for example, as where for a short distance, on the home road, it is important to ship regularly, even if a car be not full; and where it is allowable to hold freight for one or two days in order to fill a car. The report gives data also concerning the loading of coal, and of cotton, so as to make the best possible use of the space in cars.

The committee presented proposed changes in rule 5 of the per diem rules, providing for the elimination of reclaims covering intra-terminal switching movements.

Approximately 525 railroads are now marking their freight cars in accordance with the plan formulated by this association; and 560 owners of private cars have accepted the scheme of the association for the same purpose.

This committee finds that claims for errors in per diem statements are increasing; the percentage of claims to the total number of cars earning per diem ranges from 2.57 for August, 1915, to 3.04 for the month of January, 1916. The committee presented a revised form of junction card for reporting delivery of baggage cars, etc., and the form was adopted as recommended.

On the recommendation of the committee the association adopted and sent to the American Railway Association revised forms of per diem blanks; also two additional report forms were sent, one for reporting diversion penalty to the car owner and one for tracing unreported diversion penalty.

The committee recommended the revision of per diem rules 3 and 11 so as to provide a proper penalty for delays or errors in reporting penalties for diversion; and these changes were ordered sent to the American Railway Association.

#### RAILROAD BUSINESS MAIL

On this subject, adopting the recommendation of the committee, the association sent to the American Railway Association a form of transmittal envelope to be used in connection with claim papers sent by baggageman or by express. This letter of transmittal must be in a government stamped envelope, while the claim papers themselves may be sent without postage. The rule requires that the paid letter and the free package to be kept together.

Adopting the recommendation of the committee on conducting transportation, the association sent to the American Railway Association a revision of car service rule 7, prescribing rates, both mileage and per diem, for baggage cars, etc., used in joint service.

The next meeting of the association is to be held at Detroit, Mich., June 26 and 27, 1917.



# Mechanical Design of Electric Locomotives

Discussion of a Paper by A. F. Batchelder Which Was Presented at the Annual Meeting of the A. S. M. E.

**A**N abstract of a paper on this subject by A. F. Batchelder, which was read before the annual meeting of the American Society of Mechanical Engineers, was published in the *Railway Age Gazette* of December 1, page 989. The more important points developed in the discussion of the paper follow:

C. H. Quereau, superintendent electrical equipment, New York Central—The operating advantages gained by having electric locomotives designed to operate in either direction are of such great importance that means must be found to provide satisfactory designs to meet this condition. The chief difficulty with present double end locomotives is the oscillation of the trailing truck which Mr. Batchelder proposes to prevent by the introduction of resistance against swivelling. This scheme is practical and has been so demonstrated, but it results in increased flange wear, at least when the center of gravity is low.

I am particularly interested in that the item of "reliability in service" has been given an important place in the list of requirements for electric locomotives. This is a feature which quite commonly is omitted in a discussion of this kind. On railroads which run through a sparsely settled country with comparatively few trains per day, a train delay of half an hour may be of comparatively little importance, but in eastern territories, especially around the large cities, a delay of a few minutes will upset the smooth operation of the railroad for hours and the effect of it will reach back on the line for 150 miles. It is my opinion that the prevention of such delays justifies a considerable increase in first cost, and also that such maintenance methods should be employed that will prevent, as far as possible, delays to traffic. It is decidedly poor policy to reduce maintenance costs if by so doing the result is increased traffic delays.

In my judgment Mr. Batchelder very wisely considers the "cost of maintenance of permanent way" of more importance than "cost of maintenance of locomotives." I believe, however, that if the cost of maintenance of way is no greater under electric than steam operation, it would be satisfactory and would not be used as an argument against electrification.

As to the cost of maintenance of electric locomotives: The difference in the cost of maintenance at the rate of 3.5 cents a mile and 7 cents a mile is approximately \$1,000 per engine per year. This saving, capitalized, represents a considerable sum, and would warrant an appreciable increase in first cost. The sum mentioned is 10 per cent of \$10,000, or 5 per cent of \$20,000.

With half a dozen different designs of electric locomotives, no one has had the advantage of experience with more than one of these types. Therefore, one's conclusions as to other types are based on opinions and theoretical considerations rather than actual results as shown by service records.

The New York Central electric locomotives are all equipped with bipolar, gearless motors mounted directly on the driving axle. The operating results have been completely satisfactory to the officers of every operating department affected. This statement, you will note, does not include the net financial returns from the investment, which must take into account the item of fixed charges.

With the usual maintenance these locomotives ride satisfactorily, do not have any undue effect on the track structure, and are perceptibly more comfortable than steam locomotives. In order to secure these results it is necessary to keep the total lateral motion, both in the boxes and center-pins, within

limits which approximate three-quarters of the allowable lateral motion on steam locomotives.

Table I contains statistics which will permit a conclusion as to the reliability of these locomotives in service, and which will probably be more satisfactory than any general statement or expression of opinion, no matter how authoritative.

TABLE I.  
TRAIN DETENTIONS DUE TO DEFECTS IN ELECTRIC LOCOMOTIVES  
Miles Per Detention—All Locomotives

Year	Mechanical	Electrical	Grand Total
1912.....	48,271	103,967	32,965
1913.....	27,873	86,716	21,093
1914.....	35,625	57,395	21,981
1915.....	53,720	107,440	35,813
1915.....	Type "S" Locomotives (Rigid Frame)		
	59,583	187,260	45,201

Note: All detentions of two minutes or more included. In 1913 and 1914 there was a total of 16 Class "T" locomotives placed in service. In 1912 there were 47 locomotives in service. Since the middle of 1914 there have been 63. Detentions due to man failures, or delays to following trains, not included.

In this connection I wish to enter a strong plea for the use of "miles per detention," instead of "miles per minute detention," as the unit in the preparation of statistics by which to judge the reliability of equipment in the service and the efficiency of the organization responsible for maintaining it. Including the time element leads only to confusion and is, therefore, worse than useless.

TABLE II.  
INSPECTION AND REPAIRS OF ELECTRIC LOCOMOTIVES  
Cost, Cents Per Mile

Year	Labor	Material	Total
1912.....	1,888	1,460	3,348
1913.....	1,982	1,454	3,436
1914.....	2,155	2,134	4,289
1915.....	1,901	1,379	3,280

Note: The above statistics were compiled in accordance with the requirements of the Interstate Commerce Commission. In the year 1914 it was necessary to replace all driving wheel tires because of unsuitable material, regardless of the extent to which they had been worn. The costs of maintenance have been essentially as above since 1907, omitting 1914.

In studying Table II, the following facts should be borne in mind. These figures include the cost of inspection and maintenance of all the electric locomotives, both road and switch. In 1912 and 1913 approximately half the total engine mileage and in 1914 and 1915 approximately one-third was that of engines used in switching service. Our experience has shown the cost of maintenance of engines in switching service to be about twice that of those used exclusively in road service. It follows that the cost of maintaining the road locomotives has been about 2.5 cents per mile and that of the switch engines about 4.8 cents per mile. In this connection it is only fair to call attention to the fact that these engines were not designed for switching service. Bearing this in mind, they have given remarkable results.

For the first ten months of 1916 the average cost of maintenance of all the electric locomotives has been 2.73 cents per mile. This gives a cost of approximately 4 cents per mile for the locomotives in switching service and approximately 2 cents per mile for those in road service. I expect these costs will not be exceeded for the entire year 1916, but very much doubt that we will be able permanently to keep the maintenance costs at this level.

C. E. Eveleth (Baldwin Locomotive Works)—When an occasion arises to examine critically different designs of electric locomotives there is almost always a tendency, due to the individual's interest in specific features, to concentrate

on particular elements and rather superficially consider the locomotive as a whole, but in Mr. Batchelder's paper we are fortunate in having a clearly brought out presentation of all the essential elements. A number of the elements are intimately related to common features of design, particularly the subject of "reliability in service," "service time factor" and "reliability in service" of locomotives which are all affected directly by the simplicity of parts.

Disregarding other features, the bipolar type of locomotive with its freedom from all gears, pinions, gear cases and motor armatures and motor axle bearings has, as regards these three related subjects, a decided initial advantage over all other designs. It also has an unquestioned superiority in mechanical efficiency as shown by the table:

RELATIVE MECHANICAL EFFICIENCIES	
Motor Design or Connection to Axle	Mechanical Efficiency Per Cent
Bipolar gearless .....	100 " "
Quill drive .....	99 " "
Geared drive (twin gears).....	95 " "
Geared to jack shaft and side rods.....	90 " "
Direct connected jack shaft and side rods....	87 " "

The difference in power consumption, due simply to the difference in the mechanical efficiency, may, when capitalized, amount to from one-third to one-half the original cost of the locomotives; in other words, to obtain the same overall economic result a material increase in investment in an engine of higher mechanical efficiency is justified, if such investment is necessary to obtain this type of drive.

In conclusion, it appears that considered from the mechanical design standpoint, Mr. Batchelder's claim for superiority of the bipolar gearless design for high speed service is founded on the incontrovertible facts that this type of engine is safe in operation, superior as to reliability and availability for service requiring no overhaul periods and requiring minimum inspection time, it has the lowest cost of maintenance on account of the elimination of gears, gear case, jack shaft, pin and motor bearings, and its maximum mechanical efficiency insures minimum power consumption.

With Mr. Batchelder's suggestion of the use of a truck center pin located in a well elevated position, all of the advantages of high center of gravity, so far as effect on rail displacement is concerned, can be obtained. On the other hand, with ordinary leading truck designs, it appears that the high center of gravity designs will give a low center of gravity effect by the action of the rear truck on the track unless the high center pin arrangement suggested by Mr. Batchelder is adopted on the trucks. These remarks, of course, refer to a symmetrically designed locomotive intended to run in both directions.

These features do not seem to have had general recognition, as they should place the bipolar gearless locomotive distinctly in a class by itself, and superior on account of these features to every other design. It is, therefore, to be expected that where the system of electrification will lend itself to the use of this type of locomotive, its application will become very general.

E. B. Katte, chief engineer electric traction, New York Central, stated that the riding of the New York Central electric locomotives had been materially improved by the addition of coil springs immediately over the journals. Before these springs were added, it was possible at high speed to follow the motion of the equalizers with the eye, it was so slow; in the event of any upward movement of the journals, the springs now have the effect of immediately forcing them down, before the effect of the movement is transmitted to the body of the locomotive.

George L. Fowler disagreed with the statement made by the author, in the section of his paper referring to safety of operation, that the rear driver puts a lateral pressure on the rail in excess of that produced by the other wheels, stating that in his experiments to determine the effect of lateral pres-

sure on the rail, he had found that the front wheels invariably gave the highest thrust.

## THE ADVERTISING MAN ON THE WAGE CONTROVERSY

Printers Ink, one of the leading advertising periodicals, has an editorial in its issue of December 7 of particular interest to both railway and advertising men. The editorial bears the title, "An Ill-Judged Attack on Advertising" and reads as follows:

The menace of a public press controlled by its advertisers has been rediscovered; this time by a leader of organized labor. W. S. Carter, grand master of the Brotherhood of Railway Firemen and Enginemen, in a speech before the American Federation of Labor convention at Baltimore, November 21, is quoted to the effect that the greatest danger to the working class today is the "coercion or subordination of the public press by the master class." Referring to the advertising which accompanied last summer's threatened railroad strike, he declared: "I have positive evidence from one of the leading advertising agencies that provision was made to advertise in 3,000 daily and 14,000 weekly papers. Think of it—many millions of dollars' worth of advertising to prejudice the public against the brotherhoods."

Of course, Mr. Carter does not say anything about the advertising which was run at the same time on behalf of the brotherhoods, and his remarks, on their face, may seem an excellent partisan argument. But it would seem as though a labor union is the very last organization which can afford to attack the public discussion of questions involving wages and working hours. It has for years been one of labor's standing grievances that the public was not informed as to the facts; that employers worked in the dark, by secret and underhand methods, never placing their contentions squarely upon record where they could be answered. That grievance was well founded. But now that the process is being reversed, and employers are coming around to the view that the public should be informed as to the facts at issue, labor still appears in opposition. The advertising columns constitute a forum in which capital and labor can meet on absolutely equal terms, and now we hear the outcry against "prejudicing the public."

We do not know of a single newspaper whose advertising columns are not open for the proper discussion of both sides of a labor controversy. We do know of several newspapers which printed the advertising copy of the railroads last summer, and editorially espoused the cause of the brotherhoods. If they were coerced and intimidated by the advertising, they adopted a very curious method of showing it. The idea that the influence of 17,000 newspapers can be bought for a few hundred dollars (or less) apiece is too fantastic to be considered seriously.

Labor itself is one of the greatest beneficiaries from the abandonment of the old methods of secrecy and the adoption of methods of publicity for corporate affairs. Its leaders have long maintained that the only thing needed is a trial of the case on its merits, publicly and without prejudice. Now that employers have taken a long step toward giving them that very opportunity, they show poor judgment in attempting to discredit it.

RAILWAY CONSTRUCTION IN ASIA MINOR.—It is stated that the Turkish Government has cancelled the French concession for the building of a railroad from Smyrna to Kasaba in Asia Minor, 54 miles southeast of Konieh, and the Franco-Belgian concession for a railway from Mudania on the Sea of Marmora, to Brusa, about 100 miles southeast of the former town. The Turkish Government states that these railways will be built by the State.

# Car Supply Investigation by the Commission

The A. R. A. Strongly Recommends That the Commission Should Not at Present Make Hard and Fast Rules

THE Interstate Commerce Commission held a hearing at Washington on December 28 on its order to the railroads to show cause why the commission should not issue orders requiring the return of cars to the owning roads in accordance with the car service rules. Representatives of the railroads at the hearing told the commission that it would be very inadvisable for it to issue any hard and fast rule at this time and expressed the opinion that better results could be obtained through the efforts of the Commission on Car Service with the co-operation of the commission. The Commission on Car Service expressed its position as to the proposed order in the following statement:

## STATEMENT BY COMMISSION ON CAR SERVICE.

"Since the Louisville hearing the American Railway Association has maintained a constant and continuous supervision of car service, first, through its Committee on Car Efficiency, and subsequently through the Commission on Car Service. The result of that supervision will be stated by Mr. Hodges, indicating that a large movement has been started throughout the country, though in detail it has not yet given relief to all parts of the country where car shortages have been most apparent. In the midst of this discussion the American Railway Association has amended its pre-existing car service rules in various radical ways so that the code of rules in existence today is practically untried, so far as experience is concerned.

"However, certain salient facts stand out as reasons for expecting the prompter movement of cars in the future, namely: the increased per diem, the progressive demurrage charges, and the application as of January 1 next of the diversion penalty to open top and refrigerator cars. This diversion penalty has not been applied to box cars for the reason that in the attempt to relocate box cars more nearly with reference to ownership, so far as number is concerned, throughout the country and thus relieve car shortages, empty cars have been distributed in entire disregard of ownership, as has seemed convenient, the object being to relieve the shortage rather than to return the car to the owner.

"Under these circumstances, the car service rules which contemplate the return of cars to their owners have not been applicable, and a diversion penalty under such circumstances would be contradictory to what is now for the moment the desired emergency practice.

"For these general considerations, it is the judgment of the Commission on Car Service that no code of rules which might be prescribed by the Interstate Commerce Commission applicable to all of the railroads would probably improve the immediate situation. It is recognized that the existing rules may, in experience, have to be amended, and it is felt that pending proof of the expediency and practicability of the existing rules they should not be taken as a standard of law.

"To that end it is the purpose of the American Railway Association, through its Commission on Car Service, to continue the constant supervision of car service practices throughout the country, and to develop further experience, devoting itself specially at all times to extraordinary efforts to relieve conspicuous congestions and shortages which interfere with the largest measure of car efficiency.

"It is, therefore, respectfully proposed that, relying upon the steady co-operation of the Interstate Commerce Commission in accomplishing the result which is its object (and it may be said the object also of the American Railway Association) that no car service rules be prescribed by the

Interstate Commerce Commission at this time, or prior to March 1, when a report can be made of experience under the new rules and present practices, and a foundation laid for more intelligent disposition of the question on a permanent basis."

George Hodges, secretary of the Commission on Car Service, gave an outline of the work of the commission. He said that the old car service rules represented an attempt to reconcile two conflicting principles, the principle of ownership and the principle of indiscriminate use of freight cars, but that the new rules had been adopted on a theory of careful observance of the right of the owner to the return of cars to his own line. The new rules, therefore, represent an entirely new practice. He said the idea was that there should be some flexibility in the rules to meet emergencies, especially after years of indiscriminate use of cars, but that the diversion penalty was provided to reduce a misuse of equipment to a minimum.

Mr. Hodges explained that after organization of the commission the first step taken was to arrange for securing complete information by requesting each road to report four times a month regarding the percentages of cars on its line. It was then found necessary to ascertain the extent to which its various requests were being observed and a department of inspection was created with a chief inspector at Washington and inspection districts at Chicago, Atlanta and St. Louis, each in charge of a chief inspector. There are now 37 inspectors on the road checking up the observance of the commission's instructions, the cases of misuse of cars and the extent to which employees are instructed as to the proper handling of cars. It was found that one of the serious difficulties in the relocation of equipment was the accumulation of cars in various parts of the country, and to ascertain this situation a series of reports was instituted by which the commission can be kept informed as to accumulations above normal. This created another department. It was also found that it was not sufficient to move cars out of the district where there was an excess, but to keep cars from going into such districts more rapidly than the cars on hand could be returned. An embargo bureau was therefore created to ascertain what embargoes were in effect and with a view to making suggestions to roads as to additional embargoes or the removal of embargoes. In addition, special embargo committees were established at Detroit and New Orleans. Representatives of various roads that have appeared before the commission have been urged to reduce the number of bad order cars, but there has been difficulty in obtaining labor and materials.

Mr. Hodges filed with the commission statements showing the location of cars, the percentage of cars on line to cars owned, and the percentage of cars in the shops, also a statement showing the principal accumulations of cars on December 16 and a list of all embargoes. He said that reports are being made more promptly than when they were first requested and that they show that, with some exceptions, a very earnest effort is being made by the railroads to carry out the wishes of the commission. He read a synopsis of reports received from inspectors, showing a considerable reduction of diversions through switching lines, an effort on the part of roads and shippers to respect the rights of the owners of cars, a more general release of equipment held under load and a freer movement of both box cars and coal cars to the owning roads.

W. W. Atterbury, vice-president of the Pennsylvania Rail-

road and president of the American Railway Association, said that the executive committee of the association had not had time to fully consider the commission's proposal, but he thought that if the commission should issue any arbitrary order its effect during the next three or four months would be "almost calamitous" and he suggested that the order be held in abeyance, at least until the Car Service Commission could work out, with the help of the Interstate Commerce Commission, the problems confronting it. Mr. Atterbury said it was a fair question to ask why the railroads have not obeyed their own rules, but that the conditions under which the rules have grown up have been entirely reversed by the European war. For example, the Pennsylvania Railroad normally owns many more cars than it has on its line, but under the new conditions the Pennsylvania has become a distributing road for traffic originated by other lines, and has an excess of box cars at a time when under normal conditions it is short of cars. He thought that if the railroads and shippers could co-operate closely the freight equipment of the country is ample for its normal needs and that it would not be the part of economic wisdom to be prepared at all times for a situation that occurs but once in four or five years. As illustrating the necessity for co-operation by the shippers, he said that in 1914 the Pennsylvania had yard capacity at Philadelphia for about 3,800 cars, while the shippers were able to unload only about 1,400 cars a day. In 1915 its yard capacity had been increased to 4,500, but the unloading capacity had increased only to about 1,800 and this year its holding capacity is nearly 7,000 cars and yet the unloading capacity is still limited to about 1,800 cars. The railroads may increase their facilities, but cannot force prompt unloading of equipment except by the demurrage rules such as have recently gone into effect. He thought that most roads, if not all of them, were trying to "play fair," but that cases frequently arise where it is necessary and proper to violate the car service rules in order to use cars where they will do the most good. If the rules are intelligently developed to prevent the chronic misuse of cars, he said, the railroads can afford to pay the penalty for any emergency violation of the rules, but he was opposed to a hard and fast rule which would not take into account the emergencies which inevitably arise. He said the roads need the assistance of the Interstate Commerce Commission, but that they are not yet prepared to suggest any definite way by which the commission can help them in addition to what it has already done, by its co-operation last winter in the handling of congestion at the seaboard terminals, by allowing an increase in the demurrage rates, and by giving its support to the recommendations of the Car Service Commission. He thought the commission could also help the railroads in getting adequate rules to prevent delay of equipment by abuse of the reconignment privilege.

Commissioner McChord said that cars should be returned at once to the owning line, loaded if possible, but if not they should be returned empty. He objected that many of the carriers did not seem to be paying any attention to the requests of the Commission on Car Service, that they are not only violating their own agreements with each other, but are "deliberately engaged in the pastime of stealing cars from each other and keeping them." He said he had seen a telegram from the president of an eastern line saying that the highest officers of two other eastern roads had declared that they were not going to comply with the request of the Car Service Commission to return cars. Mr. Atterbury said he thought that many roads had taken action which had not yet shown its effect in the reports and that his road has thousands of cars loaded with export freight which have been standing since before the order was issued to return cars but cannot be unloaded because there is no place to put the freight. Mr. Atterbury said that the roads were confronted with a difficult situation because the Grand

Trunk had declined to pay the 75 cent per diem rate on the ground that it cannot afford to do so and that it might be necessary for the railroads to refuse to load cars into Canada via the Grand Trunk.

Commissioner McChord read into the record a telegram from C. H. Markham, president of the Illinois Central, saying that its condition had not been improved and appealing to the commission to force lines having cars belonging to the Illinois Central to return them. Mr. Markham said that the Illinois Central owns 62,595 commercial cars and has on its line only about 51,000 and that the condition of many of its shippers is desperate. The commissioner also read a telegram from H. E. Byram, vice-president of the Chicago, Burlington & Quincy, saying that the Burlington is in favor of the issuance of an order requiring the return of cars to their owners, but that such an order should include box cars as well as others. Mr. Byram said that such an order is the only way to do justice to the owners of cars and to encourage the purchase of sufficient equipment; although the Burlington has made ample provision for the needs of its shippers during the past year, it has at all times had from 5,000 to 10,000 cars less than it owns.

W. L. Park, vice-president of the Illinois Central, described the serious situation of shippers in the Mississippi valley because the roads have been unable to furnish a sufficient supply of cars. He said the eastern roads have accepted so much more freight than they could handle that it has deprived other sections of the country of cars. He thought that unless the American Railway Association can find some way of regulating this matter and bringing about a restoration of cars to their owners it will be necessary for the Interstate Commerce Commission to take charge of the situation, but that such action on the part of the commission now would be premature because the new rules are in the nature of an experiment and the application of a rigid order carrying a penalty of \$5,000 would tend to confuse the situation. In reply to a question by Commissioner Clark, Mr. Park said the present situation was even worse than that in 1906 and 1907, but he thought the best results could be accomplished by leaving the situation in the hands of the Car Service Commission with the co-operation of the Interstate Commerce Commission to add force to the commission's recommendations.

E. H. De Groot, Jr., superintendent of transportation of the Chicago & Eastern Illinois, described the situation on his line and that of the Chicago, Terra Haute & Southeastern. He said that according to the last report, the C. & E. I. had 9,700 coal cars on its line, while 7,400 of its cars were away from it and that consequently it was able to supply only about 80 per cent of the demand. He thought the situation on his road would be improved if the commission would enter an order requiring the railroads to return open top cars to their owners.

W. A. Worthington, vice-president of the Southern Pacific, protested against any order affecting open cars only as being especially injurious to western lines, which now have a large excess of open cars and a deficiency of box cars. He said that any order should apply to all classes of cars alike, but he thought any such order at the present time would be inadvisable.

NEW YORK HARBOR.—New York has one of the best natural harbors in the world, but because of lack of co-ordination of terminal facilities an enormous amount of unnecessary work is done in handling its immense quantities of freight. Although New York has more water front than Hamburg, London and Liverpool combined, nevertheless Hamburg handles almost equal tonnage with only 24 miles of water front. London handles almost equal tonnage with 28 miles of waterfront, though handicapped by an 18-ft. tidal range, and Liverpool handles almost equal tonnage in a small area, although handicapped by a 28-ft. tidal range.

## THE RAILROAD Y. M. C. A.

By Y. Sugimoto.\*

One of the most significant features of the American railroad system is the complete organization of the railroad branch of the Y. M. C. A. About one year ago I arrived in New York City, a stranger unfamiliar with American customs and ways of living. I went at once to the Railroad Department of the International Committee of the Young Men's Christian Association in the hope that I might get some helpful suggestions about my investigation of American railroads. I felt rather uncertain about the nature of the advice I would receive and the kind of welcome that would await me.

As soon as I met the men there, however, my uneasiness disappeared and I forgot for the moment that I was a stranger in a foreign land. They welcomed me warmly and assured me that they would do everything in their power to make my work profitable and interesting. They introduced me to the officials of the Grand Central terminal Y. M. C. A. and I stayed there for a few months. I then took a trip through the eastern and southern states to investigate railroad conditions. Wherever it was possible, I stayed at the Railroad Y. M. C. A. and everywhere I found the same hospitality and spirit of helpfulness.

I sometimes attended the Bible classes, where I found devoted secretaries and earnest students. At dinner or luncheon I often had an opportunity to come in close touch with members and to listen to the addresses of eminent men. On these occasions they talked frankly to me; and though it was often difficult for me to understand the English, I never failed to comprehend the spirit of good-will and friendliness.

What was the secret of this fair-minded interest and helpfulness? I tried hard to find out. This broad-minded tolerance was even more interesting when I remembered the impression I had received upon my arrival in America from some of the absurd and dangerous articles in newspapers regarding Japan and the Japanese. I felt then that the spirit of unfriendliness in this great country must be very strong, and my one wish was that I could speak English well enough to help dispel these false notions. But my intercourse with officers and members of the Railroad Y. M. C. A. soon convinced me that these ridiculous articles were not expressions of the real sentiment of the American people. The misunderstandings and prejudices are the inventions of those who serve special interests, and I have found that they are in no way shared by thinking people.

I, an unknown foreign student, was welcomed by the Y. M. C. A. men as though I had been their life-long friend. Their spirit is liberal, their point of view broad, and nationality and creed make no difference to them. As I became more and more assured that the members of the Railroad Y. M. C. A. stand for the highest physical, moral and spiritual development, I became even more anxious to know the underlying cause. I tried to study every phase of the work as carefully as I could in order to discover this cause and at last I decided that it could be attributed to nothing except the ideals and teachings of Christianity. It is the spirit of broad Christian sympathy which inspires the devotion of the secretaries. It is the Christian altruism which actuates large numbers of volunteer workers, and it is the search for Christian teaching which has brought hundreds of railroad employees into the Y. M. C. A. Christian organization is "the thing which distinguishes these establishments from ordinary club houses." How could the railroads get along without the Railroad Y. M. C. A.? It is an indispensable asset. Its sleeping rooms are neat, and its dining rooms clean. Its libraries are provided with many good books; but above all is the unseen influence which pervades the atmosphere of the association.

\*Mr. Sugimoto is connected with the Imperial Government Railways of Japan. He has been in this country about a year and expects shortly to return to his native land.

If the Railroad Y. M. C. A. is such an important factor in railroad operation in America, why should it not be equally essential in Japan? How can we with our limited resources secure the benefits of this organization?

It is not, however, the magnificent buildings and perfect accommodations of which we are envious, but we want to get the spirit and to learn what lies beneath the co-operation and breadth of view, which exist in the Y. M. C. A. of America. The present task in Japan is to convince the government and others interested in railroads of the economic value of the Railroad Y. M. C. A. After that it will be easy to establish it.

Almost all the railroads in Japan are owned and operated by the government, and our constitution allows absolute freedom of belief; so that the fact that the Railroad Y. M. C. A. is fundamentally Christian, would not in any way prevent its progress.

As a student of the American railroad system and especially employee's welfare work, I consider it my duty to take back to Japan the spirit of the Railroad Y. M. C. A. and to do everything in my power to promote in my country the same kind of inspiring helpfulness that I have found among Railroad Y. M. C. A. men in America.

## THE WORK OF THE TRAINMAN\*

By Roberts Walker

The more efficient a railroad is, the more closely does it approach the operating man's ideal—every train loaded to the full capacity of the engine. Engines thus loaded will break no speed records.

All this means that nowadays the majority of freight crews have slow runs of long hours. The average run is 100 miles and a heavy train may take from 6 to 16 hours to complete it, nearer the latter than the former. These reiterated long slow runs have undoubtedly impressed the men with the tediousness of their work, and if they were seeking to relieve the tedium, we ought to sympathize with them. But of that more later.

Right here let me philosophize a bit. If big slow trains mean higher net earnings, you as business men would think the trainmen should co-operate cheerfully to make a good showing for their employers. It is unpleasant to have to say that few train crews seem to be imbued with any such spirit of team work. I do not mean that they curtly dismiss the subject. They have various counter-suggestions. They claim that more trains at higher speed would cost no more, by reason of the saving of overtime. It is said that the Pennsylvania is giving this idea a trial on one of its divisions. They also claim, with considerable persuasiveness, that the amount of freight moved per man has constantly increased and that the lessened costs have been too largely at the men's expense. This is flying in the face of all efficiency ideals, to say the least. If the management, without requiring greater exertion on the men's part, can make their work more productive, the men ought not only to submit but to pitch in and help. After all, trains are not pulled by the men, but by *steam*.

In fairness to the railroads, it must be recognized that with increased train-loading have come many ameliorations in working conditions. Wages have been much increased. A freight conductor in Middle Western territory, running only his contract minimum mileage without extras or overtime, would make \$133.76 in 30 days of less than ten hours each. Henry Ford's famous \$5-a-day men, at 7 hours a day for 26 days, make only \$130 per month, and their work is incomparably more exacting and fatiguing than any freight conductor's under the above conditions. If a freight train does company work (like unloading ties or ballast), extra pay for the time the train is thus engaged is required by contract, and the same time counts as part of

\*From an address before the Ethical Culture Society, New York, December 19, 1916.

the hours elapsed between terminals; in other words, double payment is required.

Under the so-called "automatic release," a crew that is employed for a few miles and an hour or two, begins a brand-new day if despatched again upon their return, thus getting pay for two days' work within the space of 16 hours or less. When held away from home terminals without work, a day's pay is required for each 24 hours thus subject to call though out of service. Nowadays on many freight runs the trainmen perform no work between terminals, unless a hot box or other emergency develops. Automatic couplers and power brakes have lifted from the brakemen their most laborious and dangerous tasks. Indeed, these delicate fellows have limited by contract the number of bales of cotton (five bales) they will move at a station, have exacted that heavy supplies be placed on cabooses by other laborers where practicable or that two hours' road pay be given if trainmen have to load cabooses or transfer caboose equipment, and have stipulated the furnishing of ice in hot weather. The railroads have made their work less hazardous by block signals, heavier rails and more solid construction. Even on the engine much reduction of drudgery has been accomplished. The engine crew no

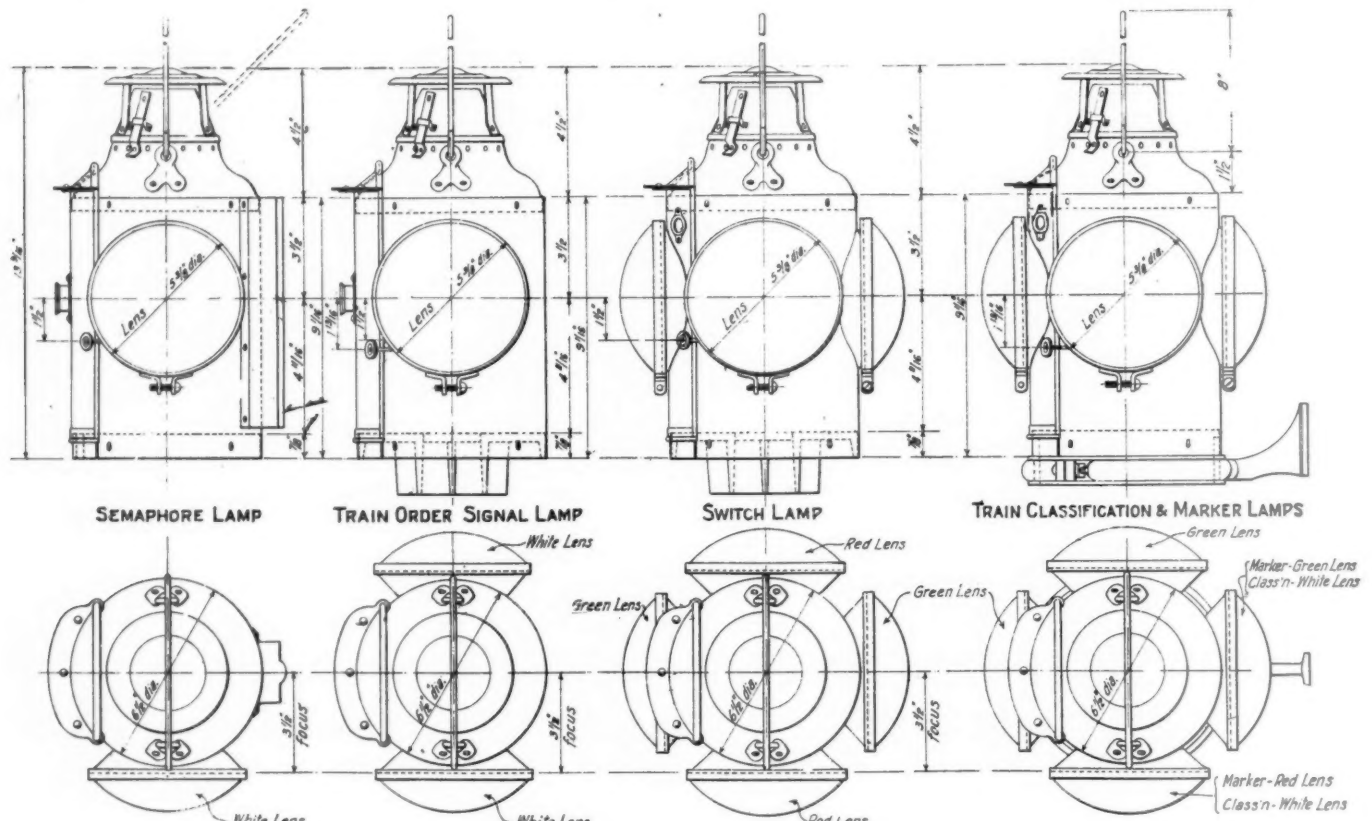
at the same time furnishing employment to a train crew.

Other instances could be quoted of the reactionary attitude of the train employees toward the efforts of their employers to move more freight per ton of coal burned or per train-mile, but the motive will not, I feel sure, be found to reside in antagonism to long hours as such. The reason why the men won't co-operate cheerfully in the effort for bigger trains and cheaper transportation costs is what seems to me to be the meat of this problem, namely:

This fight is not for better hours but for better pay.

### A STANDARD LAMP

The Canadian Pacific has recently designed a standard lamp for use with switch, semaphore, train order signal, train marker and engine classification lights in which all parts have been made interchangeable as far as possible to decrease the amount of stock which it is necessary to keep on hand and to facilitate the filling of requisitions for these materials. In these lamps one body is common to all, differing only in the number of lens openings. One size of lens (5 3/8 in. in diameter), one type of door and one style of lamp top are



New Standard Lamp of the Canadian Pacific

longer prepares the engine for service nor stables it at the end of the run; hostlers and firetenders do everything from the time a run is completed to the time the engine backs onto the next train it is to haul. The superheater has lessened the firemen's work somewhat. On many big engines, a power-driven apparatus shoves the coal forward within easy reach of the fireman.

The trainmen cannot be said to retort in kind. As a specimen of limiting output, I quote from the wage contract: "The practice of double-heading . . . will be discontinued, except . . ."

"Two engines with 18-in. x 24-in. cylinders or less may be double-headed with a tonnage not exceeding 1,400 tons."

That is to say, two baby engines may be double-headed on a baby train. Manifestly, the only object of such an exaction is never to call out an engine crew without

common to all these lights. Likewise the bottoms of the switch and train order signal lamps are alike, while the train marker and engine classification lamps are identical except for the color of the lens and for the fact that a blinder is used on the engine classification lamp to cover the lenses towards the center and rear of the engine. The semaphore lamp has the R. S. A. standard socket.

The engine classification and train marker lamps can be used in any position right or left. The semaphore and switch lamps are equipped with long time burners and 31-oz. founts, while the train and train order signal lamps are fitted with one-day burners. The lamps are made of 18-gage sheet steel and are provided with lenses of the standard colors. The general design of the lamp is shown in the accompanying drawing, which was prepared in the office of J. M. R. Fairbairn, assistant chief engineer, eastern lines.

# Some of the Very Pressing Transportation Problems\*

Causes of the Present Congestion; Interest of the Shipper  
as Well as the Investor in Upholding Railroad Credit

By Winthrop M. Daniels

Member Interstate Commerce Commission.

I SUPPOSE that there has never been a time in the history of railroad transportation when there has been a greater number of problems pressing for solution, or when these problems were of greater magnitude or more baffling in their complexity. Without attempting even the briefest recapitulation, we cannot avoid mention of the matter of car shortage, with its attendant evil of the embargo; of the necessity of securing in the public interest continuity of railroad operation despite the disruption that is threatened by reason of wage disputes; of the scope which governmental regulation of transportation should assume in future, in the apportionment of regulatory powers as between federal and local agents; of the proposed federal control of railroad security issued; of the proposed federal incorporation of interstate carriers; of the proposed unification of the taxation of carriers; of the readjustment of the administrative machinery of the federal commission, either in the direction of regional boards or otherwise; of the proposed grant to the Interstate Commerce Commission of the power to fix absolute rates, or at least minimum rates in addition to their present power of fixing reasonable maximum rates. These and scores of other problems press for consideration and solution, and the Newlands commission confronts a task almost comparable in difficulty if not in magnitude with that which beset the framers of the Constitution.

It is hardly necessary to state the very obvious fact that the expansion of business, and particularly the swollen volume of exports, has precipitated a demand upon our transportation system which that system has found itself unable to meet. Contributory to this result is the practical temporary breakdown of water routes. Both the American-Hawaiian Steamship Line and the Luckenbach Line have taken their fleets out of the Panama Canal service, and, while occasional vessels under charter ply the waters of the canal, the hundreds of thousands of tons which in normal times would traverse that waterway are now saddled upon the overland rail routes. On the Great Lakes also the vessels in service have actually declined in number and carrying capacity, with the result that the ordinary lake-and-rail traffic is compelled in augmented volume to seek an outlet over all-rail routes. Despite this practical breakdown of accustomed channels of transportation, and in part because of this very breakdown, the rail carriers have been handling a greater tonnage than ever before in their history.

The immediate remedies, however, have to a certain degree been recognized. The maximum utilization of extent equipment, and in particular the fairer distribution of such equipment by the carriers' observance of their own car service rules for the return and interchange of foreign cars, will contribute appreciably to lessening many of the more pressing cases of hardship. Augmented charges for track storage or warehousing, with progressive demurrage charges, will help, but the carriers must at the same time be equally ready to augment their per diem and to impose and enforce heavy progressive penalties upon each other for the detention on their lines of foreign equipment. If the American Railway Association cannot exercise over its members any power other than that of mere recommendation, it is apparent that such

power must, in the public interest, be lodged where it can be effectively exercised. Many cars held idle because material for repairs was awaited from the owning line should have been promptly made serviceable by the carrier in whose custody such cars were, and as promptly put back in public service.

The queries that are daily being put by the commission to the various carriers of the number of foreign cars held, of the number returned, of the average daily car movement, of the number detained under demurrage, and the periods and causes of detention, are laying a basis for a remedy of the systematic disregard by the carriers of their own rules, and for the avoidance of penalizing such practices in future. In this respect and in many others it is becoming apparent that in acute crises such as the present, and especially in the laying and raising of embargoes, there must be a concentration of authority in the hands of some central body; and that the exercise of such authority in the public interest must supersede for the time the selfish policy that would otherwise dictate and control the action of individual lines. Such authority must also be exercised in drastic restraint of speculative shippers, who, under pretense of intended reconsignment, hold cars in congested terminals until the opportunity of a sufficiently favorable sale of the freight presents itself.

## RAILWAYS UNABLE TO HANDLE TRAFFIC

If we look beyond the present emergency, and the emergency measures that may help to remedy it, the underlying situation which discloses itself is far from reassuring. The ultimate fact is that the American railways as a whole are at present unable to handle the total volume of American commerce at peak load. This is a condition in which industrial America cannot and will not permanently acquiesce.

The essential cause of this unpreparedness is that in recent years the requisite additions to equipment and facilities have not been made. While the shortage of cars is the most patent evidence of the inadequacy of transportation facilities, we must not lose sight of the fact that more cars alone would not wholly meet the requirements of the hour. Without additional locomotive power, and without additional track and terminal facilities, a mere increase in cars might conceivably intensify congestion rather than remove it. While from 1908 to 1914 the average annual addition to first track was 4,342 miles, the new mileage built in 1915 was less than in any year since the Civil War. The miles of main track per 10,000 inhabitants has shown a slight but a progressive decline for every year since 1908. While the addition to the cars in service, exclusive of private cars, increased in the five-year period 1906-1910 by approximately 300,000, for the succeeding period of five years the increase was less than 115,000. And even if the greater capacity of later built equipment be taken into consideration, the additional ton-capacity added in the two periods was 15,000,000 tons for the first as against 10,900,000 for the second.

I am not unmindful of the fact that car efficiency is the product not merely of the number of cars, but of their capacity and the average number of car-miles made daily. But making all due allowance for these modifying factors, it appears indisputable that the capacity of our rail transporta-

\*From an address before the Toledo Transportation Club on November 23, 1916.

tion system as a whole has been falling astern the growth of population and the demands of traffic.

#### CAUSES

When we analyze the causes of this relative decline, there are certain important facts that must be borne in mind. There is, first of all, the enormous aggregate expenditure which annual betterments and additions require. This has been variously estimated from \$500,000,000 to \$700,000,000 a year. Gigantic as this seems, the lower sum is but little over 3 per cent of the present outstanding securities of the carriers, and can hardly be deemed at the outside more than a 5 per cent annual addition to the property investment of the transportation system. Such an increment to the plant of a manufacturing concern would seem fairly modest. And yet this enormous aggregate, in so far as it is not provided out of surplus earnings, must come from the sale of securities, and not a dollar can be coerced into this or any other channel of investment, but must come from the voluntary action of investors. During the past two years we have practically absorbed \$1,500,000,000 of our railroad securities formerly held abroad, the securities themselves having been released by foreign holders in settlement of the outstanding balance of indebtedness created by our excess of exports. New industrial enterprises launched during the same time have absorbed an unknown but possibly an equal amount of free capital coming on our domestic market for investment. Thus, despite the fact that for the year ending June 30, 1916, the average return, estimated at about  $6\frac{1}{3}$  per cent, upon the carriers aggregate book cost of road and equipment, has been higher than for any year since statistics have been kept—that is, since 1891—the relatively meager sale of new railroad securities has supplied a wholly inadequate sum to finance current requirements in the line of needed additions and betterments.

It stands to reason that if, upon the return of normal conditions, the investor persists in his reluctance to furnish the sums required to supply the current needs of our railway system, we shall confront a situation where inadequate facilities will become chronic, a condition, one needs hardly to say, which will mean a revolution in the entire system of railroad ownership, control and management.

#### DECLINE IN FREIGHT RATES

There is but one suggestion which seems pertinent in conclusion. The average of freight revenues per ton-mile has shown on the whole a declining tendency since 1891. The average in 1891 was practically 9 mills per ton-mile; for the past five years it has been below  $7\frac{1}{2}$  mills per ton-mile; in 1914 and 1915 only  $7\frac{1}{3}$  mills per ton-mile. Compared with the almost universal increase in the price level generally, the persistent tendency in freight rates on the average to fall is a most striking phenomenon. It suggests the question whether the shipper's interest, in case he desires a continuance of the present system of non-governmental operation, is not primarily an interest in the fair relative adjustment of rates, his own and his competitors', rather than a further reduction in the absolute height of freight rates, with its apparent inevitable sequel either of inadequate service or of a radical change to governmental ownership and operation. Upon that issue I shall not even venture to suggest the pros and cons. But this I do insist upon, that if a fundamental change of that character is to come, it ought not to come through the unintelligent policy of first blindly courting inadequate service, and therein desperation, resolving to escape the ills which our policy, or lack of policy, has brought upon us, by flying to other ills that we know not of.

#### PUBLIC INTEREST IN RAILWAY WAGE DISPUTES

The partial failure of railway carriers to afford adequate

service is traceable to the carriers' unpreparedness in the matter of equipment and facilities. But we have recently had brought into vivid relief the possibility of an even more extensive breakdown in transportation service, due to the inability of railway managers and employees to come to a mutual voluntary agreement over disputed questions of service and wages. This disruption of the transportation system was avoided by the compulsion of law in decreeing an experimental trial of a new method of making compensation to certain classes of employees. This at least may be said in favor of the statute which decreed such an experiment, that the increased cost thrown in the first instance on the carriers, even if its entire burden were eventually shifted on the public in the form of rates, would have been multiplied many times over if the controversy had issued in a general stoppage of traffic and a consequent cessation of general industry.

The acute question remains of guaranteeing a fair and even-handed settlement of like disputes in future without the attendant peril of blocking the wheels of commerce. If disputes of this character affected the principals only it might be possible to allow them to go to extremities until a trial of strength had indicated the relative economic strength of their respective positions. Where, however, the chief party in interest, the general public, the all of us, must be the chief sufferer in such a crude trial of opposing force, there is every reason to provide for a method of adjustment by which the more primitive struggle of a fight to a finish may be supplanted by a fairer and more rational process. Nor can either contending party, if the one is assured of a just and prompt satisfaction of its just claims, and the other of a just and certain recompense for compliance with such just claims, show any good ground why the public shall not prescribe the instrumentalities or agencies by which the costs to society as a whole shall be reduced to a minimum. Neither the shibboleth of coercion nor the shibboleth of confiscation is going to persuade the American public that its interests are probably subordinate to those of one part or another part of its constituent members.

#### PLAN OF ARBITRATION IMPERFECT

When I have said this, I am far from indulging in any indiscriminate laudation of what is loosely termed "arbitration." The truth is that distrust of arbitration, as that process has frequently operated in the past, is often well grounded. Boards of arbitration have in many instances failed because the arbitrators were inexpert, because their awards were mechanical compromises, because their adjudications have been occasional and spasmodic, because after a brief activity virtue has gone out of these tribunals, leaving an increasing twilight zone of disputed questions undetermined, and because no continuous power of enforcement of awards has existed to prevent the recurrence of grounds of dispute and recrimination. What would the business community, with its infinite variety of commercial differences ever growing in number and in complexity, think of a system of courts which was constituted only occasionally when the tension between litigants had reached a dangerous limit, and which, having handed down judgments upon a few main controversies, and these based often upon no well-ascertained or clearly defined principles, expired by limitation, without the continuous power to pass upon matters daily arising which fell outside of the letter of its decisions? The history of much arbitration shows that the arbitrators in many cases must first be made acquainted with the intricate and often elaborate conditions of particular kinds of work and its remuneration. If they started with this knowledge, it would happen not infrequently that negotiation would render an arbitral litigation unnecessary. And an expert, continuous and authoritative board of conference,



calling upon an umpire who might be an ex-officio member only when negotiation had failed, is what seems requisite to make the wage adjustments which the interests not only of the principal contestants but of the general public imperatively require.

There are but two observations which I venture to add to this already too lengthy address. One is that, in my judgment, nothing would be a more serious mistake than to impose the fixing of rates of wages upon a tribunal whose duty it is to fix rates for transportation service. It would travel the endless road of failure in trying to avoid the double reproach that in setting rates it was looking beyond to the wage remuneration the rates would afford, and that in setting wages it was committing itself in advance to the rates it would have to establish. The other observation is that if the multiplication of commissions, industrial, commercial and social, seems to be but creating an endlessly complex machine of administration, this is the price that must inevitably be paid if we are to cope with the endlessly growing complexity of the modern industrial order.

### FIRE EXTINGUISHERS ON PASSENGER CARS\*

By T. S. Potts

Cincinnati, Hamilton & Dayton.

The essential features of an extinguisher for rolling equipment are:—substantial construction, sufficient size to cope with the ordinary incipient fire, capable of withstanding rough handling or shaking without impairing the efficiency of the extinguishing agents, non-freezing when used in cold climates, easily operated and readily accessible for examination to ascertain if it is in working order. Some states have laws requiring installation on passenger coaches of extinguishers constructed to certain specifications. These specifications are, as a rule, difficult for the manufacturers to meet throughout and therefore the states' enforcement has been lenient to such an extent that almost any type of extinguisher has been acceptable. The railroads, generally speaking, have selected, in most cases, extinguishers above the quality which might be said to just satisfy the laws.

The careless person with smoking material and his non-descript baggage contents is still about, fires from electrical causes from either the car lighting system or contact with outside overhead electric wires are frequent, and fires from blazing journal boxes igniting wood underframes are still reported. A record of the equipment used by twenty railroads on their passenger coaches shows:

- 2 roads use the break-bottle type.
- 2 roads use the break-bottle type and tip-over type.
- 2 roads use the tip-over type.
- 2 roads use the tip-over special railroad type.
- 2 roads use the air-expelling type (non-freezing).
- 3 roads use the non-freezing cartridge type.
- 1 road uses dry powder and one-quart type (non-freezing).
- 2 roads use the one-quart type (non-freezing).
- 1 road uses the tip-over special railroad type and the air-expelling (non-freezing) type.
- 1 road uses the one-quart and hand grenade types (non-freezing).
- 1 road uses the tip-over, the non-freezing cartridge, air-expelling and dry powder types.

Non-freezing extinguishers are used on ten railroads, the 3-gallon tip-over and break-bottle types on six railroads, the "special railroad" tip-over on two roads and the 3-gallon tip-over, railroad special and the non-freezing type on two roads.

The ten roads using the non-freezing extinguisher operate in the northern part of the country, one road using the tip-over and break-bottle type operates entirely in the South. Three roads using the one-quart type are partly electrified and the road using the hand grenade passes through a state having laws regarding the installation of fire extinguishers.

The air-expelling and one-quart extinguishers come nearest to meeting the requirements for use in cars, for both can

withstand considerable hard usage without damage. No amount of shaking will impair the efficiency of the extinguishing agency; neither will freeze at temperatures experienced in the United States, but one (the one-quart type) only is readily accessible for examination though recently an air-expelling machine has been manufactured which can be tested with a pressure gage while in service. The air and the one-quart extinguishers each has its limitation, the one-quart extinguisher being most effective for fires on electrical equipment and small oil fires, but is not as efficient for freely burning fires. The air-expelling extinguisher is absolutely dangerous to life on electrical fires; it will probably extinguish the other fires.

All state laws referring to the installation of fire extinguishers on rolling equipment should be examined and, if possible, general specifications drawn up to cover all the requirements. Where laws exist, the states' approval of any special make of fire extinguisher should be obtained and a record of the type of extinguishers used on all railroads, and why they were adopted, should be made. Investigation might possibly bring out that instead of installing an extinguisher on each car it would be satisfactory to have each trainman, who at present carries a kit, carry one extinguisher in his regular train equipment. In this event the one-quart seems to be the only adaptable type now available.

### A MONTHLY ANALYSIS OF OPERATING EXPENSES

By J. H. Hopkins

While it is true that the operating ratio—relation of expenses to earnings—is a factor on which great emphasis is laid in judging the earning power of a railroad, in point of fact this is not necessarily a measure of operating efficiency, nor is it of material value in comparing the performance of the several divisions of any one railroad.

Even when operating conditions on two or more divisions are similar, it is difficult to make comparisons from gross earnings, expenses and net earnings. So many factors are involved that while physical location and mileage may be closely analogous, the character of traffic, position of terminals and by what division operated, apportionment of rates, etc., all enter largely into the operating ratios and make it misleading to compare any two divisions for which earnings and expenses are kept.

The preparation of monthly statistics to compare earnings and expenses by divisions would therefore seem of doubtful value. The plan entails a great amount of work in apportioning overhead expenses as well as revenues, and is of little practical use as a measure of operating efficiency because of the large number of arbitraries making up the figures on both sides of the ledger, and because it fails to show the service performed for the amount of money expended.

Some roads keep their earnings and expenses only by corporate companies in accordance with Interstate Commerce Commission regulations. An immense amount of accounting is saved in this way, though there is an advantage lost by not placing each superintendent on an independent basis and treating his division as a separate railroad, for the net earnings of which he is held accountable.

The very nature of railroad transportation, however, makes this plan only an ideal, impracticable under conditions as they exist; for each division cannot stand off by itself but is so interwoven into the entire system that its individual earning power must be subordinated to the general good of the company of which it forms a part.

With this rivalry among the several divisions showing separate net earnings, comes the tendency to shift transportation difficulties onto a neighbor perhaps less suited by operat-

\*From a paper presented before the Railway Fire Prevention Association.



412	Clearing Wrecks			O						S							
416	Damage to Property			O						S						C	
417	Damage to Live Stock on Right of Way															C	
418	Loss and Damage—Freight									Q							
419	Loss and Damage—Baggage			O						S						C	
420	Injuries to Persons			V						S						C	
TOTAL				O						Q						C	

Symbols—

Total Quantity for the Month

- A—Equated Miles of Main Track Maintained. (3 miles Side track equivalent to 1 mile Main track).
- B—Per Mile of Snow and Sand Fences and Snowsheds Maintained.
- C—Per 100 Train Miles (Total Passenger, Freight and Miscellaneous).
- D—Per 100 Locomotive Miles (Total Passenger, Freight and Miscellaneous—Road and Yard)
- E—Per 1,600 Tons Handled over Wharves.
- F—Per 100 Passenger Locomotive Miles (Road and Yard).
- G—Per 100 Freight Locomotive Miles (Road and Yard).
- H—Per 1,000 Freight Car Miles (Loaded and Empty).
- I—Per 1,000 Passenger Car Miles (All Passenger Train Equipment).
- J—Per \$100 Passenger Station Earnings.
- K—Per 1,000,000 Equated L.C.L. Tons Handled at Stations (100 Tons Car Load Freight Equivalent to 1 Ton L.C.L.).
- L—Per 100 Passenger Equipment Cars Switched at Terminals.
- M—Per 1,000 Freight Cars Switched in Yards.
- N—Per 100 Road Passenger Locomotive Miles.
- O—Per 100 Passenger Train Miles.
- P—Per 100 Road Freight Locomotive Miles.
- Q—Per 1,000,000 Tons Lading Hauled One Mile.
- R—Per 1,000 Miles Run by Sleeping Cars Operated.
- S—Per 100 Freight Train Miles.
- T—Per 1,000 Passengers Transported.
- U—Per 1,000 Equated L.C.L. Tons Transported (100 Tons Car Load Freight equivalent to 1 Ton L.C.L.).
- V—Per 1,000,000 Passengers Carried One Mile.

ing or physical conditions, or by the immediate situation at hand, to take the burden that one division is eager to unload. The result is often an increased expense to the company and may do far more to increase operating costs than would be saved by that "healthy" independent rivalry among the several parts. The more aggressive or influential superintendent often wins at the expense of his less fortunate neighbor. The "putting it over" policy is a temporary boon to the man smooth enough to win out, but it may be a disastrous policy for the stockholders and the public, and withal an economic waste.

To be sure, the duties of the general officers are to supervise division operations and make them cooperative to the general good of the organization, but there are many details over which the higher officers exert no control, and occasionally more momentous situations are found to exist which have grown up with the organization, and they care not to or dare not disturb them.

For these reasons I would rather measure a man's operations by another "yard stick" than his operating ratio; one that will measure his own performance exclusively, which he will not be tempted to improve at the expense of his neighbor.

As aforesaid, comparisons between divisions are difficult and oftentimes misleading, and the most careful method of analyzing costs may be unfair to one or another. At the same time it is highly desirable that comparisons be made if we are to create the right sort of rivalry and measure the growth of economic developments that must come to offset the rapidly increased cost due to outside influences beyond the division superintendent's control.

To make an analysis of operating costs, therefore, my plan would be to put each primary account of a superintendent's division on a unit basis such as would measure as fairly as possible the cost of service in terms of work performed.

It is comparatively simple to keep maintenance of way and maintenance of equipment expenses under control. In large measure funds can be appropriated for the upkeep of the property and rolling stock as occasion demands, and we may know at all times where we stand and what is the safe policy to pursue.

The traffic and general expenses are entirely beyond the control of the division superintendent, and are probably of little use subdivided among the divisions of a corporate road.

Transportation expenses, comprising about 50 per cent of all operating expenses, are the most difficult to control and cannot be met by appropriations or arbitrary adjustments to meet contingencies which may arise. They are of a varied

character, involve all sorts of problems and usually cover a multitude of sins.

Along the lines suggested, I have formulated the accompanying plan for measuring division expenses on the unit cost basis, emphasizing in the analysis transportation expenses more especially, as the maintenance of way and maintenance of equipment expenses can be better controlled, and traffic, miscellaneous operation and general expenses need not be represented at all in a superintendent's division costs.

In whatever respect a tabulation of this kind fails to measure the relative operating efficiency of the several divisions of one railroad system or of different systems, there is no question but what it will in a very fair way measure the performance of the several divisions individually by the comparisons it affords from month to month and year to year. As for transportation costs, we now have nothing by which to gage these vital expense items except a general knowledge of the increases and decreases in business.

While no doubt more suitable units could be found for a number of the primary accounts to obtain better measures of cost, the idea has been to apply operating statistics that are usually available so as to avoid keeping up records for this purpose alone, particularly quantities that are to be applied to the less important primary accounts.

The scheme outlined in the accompanying table is capable of further development or may be curtailed so as to apply only to designated accounts, as desired. It is sufficiently elastic to meet the needs and conditions of any railroad. The purpose here is simply to illustrate the plan along practical lines, and to show what can be accomplished in the way of cost analysis by applying to the various primary accounts those statistics that can be most readily procured, or which should be kept for general use on all railroads.

SWISS RAILWAY ELECTRIFICATION.—The electrification of 67 miles of the St. Gothard line of the Swiss State Railways, now in progress, is the first step in a project ultimately to operate all the federal-owned lines in that country, aggregating nearly 2,000 miles, by electric power. The single-phase a. c. system, as is now operating on the Lötschberg line, is to be used on this and future electrifications, the commission in charge having decided that it is the only system worthy of serious consideration for a project of such magnitude. While all the usual benefits are expected to accrue from the improvement, the principal item is the economy of utilizing the immense water power resources of the Alps, thereby making the railroads independent of expensive imported fuel, there being no coal mined in Switzerland.—*Railway Electrical Engineer.*

## REPORT OF DIVISION OF SAFETY

The Interstate Commerce Commission has issued a pamphlet of 51 pages containing the report of H. W. Belnap, chief of the Division of Safety, for the year ending June 30, 1916. The report proper fills about half of the pamphlet, the rest being taken up with tables showing the doings of the inspectors of freight cars and a reprint of that part of the annual report of the commission, issued last month, which deals with the work of this division.

The number of freight cars inspected during the year was 908,566, which is about 92,000 less than in the year preceding, but 118,000 more than in the year 1914. There is a marked decrease in the cars found defective, as measured by the percentage of defective cars to the total number inspected. Of freight cars, this percentage was 3.72; of passenger cars, 1.82 and of locomotives 3.66. The number of defects per thousand cars or engines inspected was 45.56. Attention is called to these gratifying decreases accomplished at a time when there was a tremendously increased volume of business; and at the same time the roads have had to do a great amount of work on cars to bring them into conformity with the standards prescribed by the commission. The report commends the Master Car Builders' Association for prohibiting the exchange of cars, after April 1, 1917, which do not comply with the government standards, a rule which will tend to expedite the proper equipment of cars.

Attention is called to the short-sighted policy on the part of certain carriers in reducing their car repair forces when business is dull—at the very time when the required safety appliances can be applied to cars with the greatest economy. The adoption by the Master Car Builders' Association of a standard type of car coupler is hailed as an epoch-making step. The obvious advantage of standardization of coupler equipment should lead to its immediate introduction and use.

Handholds which are too short and handholds, ladders and sill steps which are loose, continue to be reported with too much frequency. The condition of air brakes is improving but there is still a great deal to be done. It is noted that the railroad companies' air brake inspectors are becoming better educated in their work. The report cites a number of court decisions which have had the effect of stiffening the air-brake law. The use of logging cars, operated by the logging companies' employees, on standard railroads, is attended by some dangerous practices and some violations of law.

### HOURS OF SERVICE

The number of instances of all classes of excess service reported during the year was 98,312, an increase of 19,372 as compared with the preceding year. About four-fifths of the cases were in train service and one-fifth in telegraph service. A table is given, covering four years, showing the reported causes for overwork in train service. For the year 1916, out of a total of 73,055 causes derailments account for 25,013. The report notes painstaking care on the part of many roads in making reports of hours of service, but others are careless and omit some items. Noting the courts' decisions excusing railroads which have thus made incomplete reports, a penalty is recommended for each item omitted. There have been cases where men on wrecking trains worked long hours and then, after the wrecking service was completed, were still continued on duty, a violation of the spirit of the law. The inspectors have found a large number of cases where the hours of duty, both of trainmen and telegraphers, have been broken up into two or more parts in an unreasonable attempt to evade the law; and the decisions of the courts in these cases have not been in harmony.

The application of the nine-hour and thirteen-hour provisions of the law to the services of switch tenders who re-

ceive or transmit by telephone information concerning train movements, has been viewed differently by different courts and the law should be clarified. In this section the meaning of the term "other employees" also needs to be defined.

### HEROES

Medals of honor for heroic acts in saving or endeavoring to save life were conferred during the year on Harry E. Duey, Will Leggins and Walter Lynch.

### INVESTIGATION OF ACCIDENTS

The report gives seven pages to a review of the 85 investigations held during the year to determine the causes of collisions and derailments. This subject was partly covered in the commission's annual report, as noticed in the *Railway Age Gazette*, December 8, page 1043. The inspectors find, on a number of roads, that the manual block system is managed in a very slovenly way. Says the report:

"On one road, where a particularly bad condition was found, no attention seemed to be paid to the rules under which the block system is supposed to be operated. A block operator who had been working four years as such was not familiar with the rules; block records failed to show the time trains entered or left block; operators admitted trains to blocks without reporting time to opposite end of block or recording actual time admitted, and did not put down on block record the limits of the block. In one case under investigation on this road a block operator, upon hearing the train despatcher over the wire state that a train would leave a terminal at a certain time, placed that time in his block record as the leaving time of the train, although it did not actually leave until 52 minutes thereafter, and upon this erroneous record he asked for and obtained the block in advance for this train 1 hour and 19 minutes before the train passed his station. Another operator, after having pledged his block to this train at 10:27, gave the same block to an opposing train at 11:25 without having cleared the block of the train first admitted.

"The condition found on this road is by no means an isolated one. On other roads where the manual block system is used the investigation of accidents has disclosed that the benefits of the block system have been practically nullified by inexcusably bad operating practices. Cases are numerous where no proper block records are kept, and where operators are not familiar with the rules. In collisions investigated, it has appeared in evidence that opposing trains have been admitted to a block section with cards stating that the block was clear without any communication having been had between the operators at opposite ends of the block; in neither case was the block asked for nor pledged. On a road where a fairly good block system for the protection of following movements is maintained there is no block for opposing train movements. A serious collision on this road, caused by disobedience of a meet order, might have been prevented by proper application and observance of block-system rules."

"It is hard," says the report, "to find a reasonable explanation of why the operating officers of a railroad, after establishing a space interval system, with the laudable purpose of checking and correcting the deficiencies of the time interval system, should permit such a lax observance of the rules as to nullify all the advantages of the system." Eight collisions investigated in manual block territory, were due to the common failures which are so familiar with the time interval system.

The report again recommends automatic train stops. The train stop of B. F. Wooding is still under consideration, and it is expected that a new installation of this device, on the Delaware, Lackawanna & Western, will be tested during the present year. Reference is made to the Gollos apparatus, a report on which was published sometime ago; and to the apparatus of the National Safety Appliance Company,

whose device was installed on the Western Pacific at Oroville, Cal., and which has been described in the *Railway Age Gazette*. The commission expects to make tests of that system this year. The inspectors of the commission are to examine the Julian-Beggs apparatus on the Cincinnati, New Orleans & Texas Pacific.

Brief reference is made in the report to the straight air brake system of the California Valve & Air Brake Company and to a half dozen automatic stop inventions which have not been tested, among which are those of Sprague, New York; A. Y. Dodge, Chicago; Nevens-Wallace, Waltham, Mass., and Macfarlane, Philadelphia. Mention is made of the speed control apparatus, which is being installed on the lines of the New York Municipal Railway, Brooklyn, N. Y., but this appears not to have been examined.

In support of the proposition to introduce automatic stops, the report says that nine of the collisions investigated during the past year were due directly, or in a secondary way, to the failure of an engineman to obey signal indications; and during the past five years, 33 of the accidents which have been investigated were of this character.

### RAILWAY SCRAP OR SALVAGE\*

By E. J. McVeigh

General Storekeeper, Grand Trunk Railway, Montreal, Que.

An ordinary American railway makes \$40 worth of miscellaneous scrap each year for each mile of road operated. We have on the American continent 271,106 miles of railroad. At \$40 per mile, this amounts to \$10,844,240, and we must add to these figures, car wheels, discarded locomotives, released rail, structural steel and brass, which would bring our figures close to \$50,000,000. This is quite a "fragment or crumb."

Some years ago the Railway Storekeepers' Association took up this question very seriously and appointed committees to study the matter and recommend proper methods of handling. One of the first things they did was to classify the scrap. This is divided under 98 headings.

The next thing advocated by the association was the central scrap yard, where all scrap material would be collected and sorted, so that the best price possible would be secured at the time of sale.

In this matter of the central scrap yard one of the great roads of the United States has gone a little further than any other, and its experience should be an object lesson to every other. This road has over six thousand miles of track, and it is so situated geographically that the best market for its scrap material was at one end of six thousand miles of rail; but they did not hesitate to collect their scrap and bring it to this point. The first discovery they made was a startling one; out of the enormous tonnage brought into this yard it was found that 40 per cent was good usable material, and the value of this 40 per cent, as they selected it from the actual scrap, amounted to \$175,000 per month. When this was made known, the departments became more careful in handling their material, and the good material found in the scrap gradually diminished, until today it amounts to only 6½ per cent of the gross tonnage.

In connection with this yard there has been established a salvage and manufacturing plant, and with even the small percentage of good usable material that they now rescue from the scrap pile, the yard is paying a net profit of \$25,000 per month. In addition to this they have their scrap sorted and classified, so that they secure the best possible price, and as this will average them from \$2.00 to \$4.00 per ton increase over what they would receive if the scrap was unsorted,

the gross profit from this yard runs into very high figures indeed.

One of the most mischievous fallacies in the railway world is the idea that the man who uses the material would be the proper custodian of the material, and that the man who makes the scrap is the best man to handle it. Would anyone with proper understanding claim that the man who throws good material into the scrap pile is the best possible man to take it out again?

Good material finds its way to the scrap pile in various ways, and for various reasons. Like every other evil in the world, ignorance plays a large part in this game. But this is not the main reason. Men whose business it is to build and repair cars and locomotives like to have new material for their work, and the scrap pile is always handy to receive the second-hand material that they do not wish to use. Then again, being human, they frequently make mistakes and requisition for material that they do not require. Again the scrap pile comes in very handy as a grave wherein to bury their error. And as they have in the past not only made the scrap and placed it in the pile, but loaded it for sale, there has been no check on such actions, and they have "got away with it."

Anyone going into the business of reclaiming material from the scrap pile must have a thorough knowledge of what he is doing, or he is liable to lose instead of make money for his company. Or to put it in another way, the handling of scrap is a man's job.

The railway storekeepers have been the pioneers in the effort to secure for the railways the full value of their scrap, and in the movement that we call reclamation. In advocating the establishment of central yards to which all scrap on the railway would be brought for handling, we are up against the idea that to do this will mean extra expenditure. Now, the storekeepers claim to be the economy men of our railways, and we would be very poor economy men indeed if we advocated spending money for which we received no return; and we claim that we have proved beyond dispute that the central scrap yard is a money saver.

If all scrap originating on the road is sent to a central yard there is no further labor being spent on it than the mere loading on cars. The labor saved at the various outside points will be more than sufficient for handling the scrap in the yard. Then it has been found that the usable material rescued from the pile always more than pays for the labor expended. If we add to this \$2 per ton in the selling price of the scrap properly sorted, we shall need little further argument to prove that the central yard is a good proposition.

In establishing a central yard we should have a self-propelling crane with a magnet. This crane and magnet will do the work of about 30 men in the actual handling of material. But it will go further than that, as it will switch your cars and save the time of a switch engine and crew. As the cars come into the yard the material should be unloaded with the crane and magnet on one pile. From this pile it should be carefully sorted by hand and distributed in smaller piles, according to classification, the usable material being removed at this time. Then, when the scrap is sold the crane and magnet can load it again at the rate of 200 tons per day, and right here we can effect another large saving.

By hand labor the loading of this 200 tons would cost us about 40 cents per ton. Loaded with the crane it would cost less than 10 cents. Some people claim to do it for less than 5 cents, but I want to be on the safe side. This will mean a further gain of 30 cents a ton, and while we are loading at the full capacity of the crane, we are making \$60 a day, which would mean that we would pay for our crane in 166 days.

Until the central yard is established we cannot use a crane and magnet for the loading of scrap, for the reason that the

\*From a paper read before the Canadian Railway Club, Montreal, Que., September 12, 1916.

scrap is not sorted properly and must be sorted while being loaded. And this brings us to another phase of the question. In handling scrap under the old plan of having each department do the sorting and loading, we are constantly receiving claims for improper classification. That is, the receiver of the material will always claim the full amount for everything he finds in the car that is below the classification specified in the sale, and this claim must be allowed. This is a loss that cannot be put into figures. But we hear nothing from the buyer about material that he finds in this load that is above classification, and this is another loss that cannot be put into figures.

In addition to the loss suffered through improper classification there is the other and greater loss of the good usable material that is thrown into the scrap by the mechanical department, and, when the scrap is loaded by them, sent away to the buyer. What does this amount to? It is a hard question to answer. Most of us will say we don't know. The mechanical man will say it does not amount to anything. But I have a few figures that I can give. A friend had some two hundred carloads of scrap to dispose of, and it was to be loaded by the mechanical department. He had been studying this matter and he asked that he be permitted to sort and load the material. He did not have a central yard, and he was told that the mechanical department had always done this work and they could do it again. Well, they did it, but my friend was not happy. He felt that his company was losing money, and he wanted to stop the leak; he wanted proof. So he stopped two of these two hundred cars and unloaded them with his own men. He sorted the scrap and reloaded the cars, keeping out the usable material, then listed up what he had gotten out of the two cars, and priced it. The value of that material was a little over \$1,800, from two cars taken at random out of a lot of two hundred. The two loads had been sold for less than \$1,800, and they contained that value of good material.

Not so very long ago I found a shop foreman making track cold sets from scrap tires. He was wasting money very fast by destroying good scrap by wasting coal and labor on it. You may hear men tell of making spanners from old steel crank pins. When you hear such talk stop and do a little figuring. A crank pin that would make a spanner would weigh 10 to 15 lb.; as scrap it would sell for say 8 cents. Now you use coal to heat it, labor to draw it out, shape it, and finish it off. Figure that all out and then look up the price of a spanner purchased. When you find that you can buy two spanners at the cost of making one out of a crank pin, you will likely say the whole business is a farce. But you would be wrong? It is not a farce, but some people go at anything wrong; they start out without sufficient knowledge, they see one end only. And that is why I say this is a man's game. It requires an all round man, a man who can see both ends and the middle, and still has a mind open to learn every day.

### SELLING PASSENGER SERVICE\*

By George Dallas Dixon

Vice-President in Charge of Traffic, Pennsylvania Railroad

You, the outside men of the railroads of the country, are doing a great work, in many respects a vital work. It is true that you do not run the trains and that people would still travel if you ceased your labors. Nevertheless, upon the manner in which you conduct yourselves and the extent to which you serve the true interests, not only of your companies but of your patrons, largely depends the opinion which the public at large forms and holds of the railroads. Your personal contact with the public is closer, probably, than

that of any other class of men in the railroad service. I need hardly tell you that the good-will and confidence of the public mean more than almost any other consideration to the railroads today.

See to it, therefore, that whenever you talk to a man, or approach him on business, you deal with him in such a manner as to increase his confidence and respect and good feeling toward yourself, and, through yourself, toward the enterprise you represent and the railroads as a whole. It may well be of more value to you and to your company to leave a patron or possible patron, or a group of patrons, with such an impression than to ticket a large party. Without knowing it, you may be selling freight service as well as passenger service. You will surely be helping, in a measurable degree, to strengthen the general railroad situation.

There are one or two thoughts I would like to leave with you today. The first is the importance of giving careful consideration to the possible ways and means by which you may actually create business. By this I mean inducing people to take journeys they otherwise would not take, as distinguished from merely getting away from your competitors business that would exist anyway.

A passenger traffic man enjoys a most important advantage over the freight traffic man in this respect, namely, that the possibilities for increasing and fostering passenger business are relatively greater than those for increasing freight traffic. Let me explain just what I mean. Passenger traffic consists of the voluntary movements of human beings, and freight traffic of the involuntary movements of things. The passenger travels at his own will, but freight moves merely at the will of the shipper. The number of possible journeys that a passenger may take is limited only by the length of his life. Freight ordinarily makes but a single journey before its identity is changed or it is consumed or destroyed.

A steel man from Pittsburgh comes to Philadelphia or New York on business. While he is here, he may be made to see the desirability of a run to the shore before he returns. For reasons of business or pleasure he may be induced to repeat his visits to this locality many times, and also to travel in other directions. But, when the same steel man ships a carload of plates to tidewater for export, there is no way to lengthen out their journey or to make them yield a return haul back to Pittsburgh. Upon reaching the eastern terminal, their possibilities for producing railroad traffic in this country are permanently ended. A single one-way haul is the most that can, by any means, be gotten out of such a shipment of freight.

So, bearing in mind the fact that passenger traffic usually involves a round trip, with possibilities of indefinite repetition, I think I am correct in saying that, in the work of creating traffic, the passenger man is favored in having a much more elastic medium to work in than the freight man. An actual increase in the volume of freight traffic can only result from increases in the productive activities of industry, mining or agriculture.

The possibilities for the expansion of passenger traffic, however, are by no means limited to the growth in population of communities. An equally important means is in the stimulation of the *desire to travel* by appealing to the imagination and stirring the "wanderlust" that is in the mind of every man, and every woman, too. Therefore, it seems to me that the wisest passenger men of the future will be those who tend more and more to devote their best energies and their strongest endeavors toward this problem of the creation of new traffic.

Whatever you do, do not for one minute allow yourself to fall into the error of believing that the field for creating new passenger traffic is in any sense a narrow or poor one, or that it even approaches being worked out. On the contrary, it is both broad and rich, and contains vast untouched resources. Travel, like most of the other activities of life, is largely a matter of habit. We, who are in the railroad busi-

\*From an address at the forty-fourth annual convention of the American Association of Traveling Passenger Agents at Philadelphia on October 2, 1916.

ness, accustomed to traveling ourselves and to contemplating the impressive statistics of passenger traffic, can hardly realize how great is the mass of people who, even in this day of swift communication, can hardly be said to travel at all.

There are here in this city of Philadelphia many thousands of people who have never seen New York. Yet it is only 90 miles away. Still more thousands of Philadelphians have never been to Washington, which is only 137 miles distant, and there are many who have never even seen Atlantic City, the world's greatest seashore resort, and only a little more than an hour's ride from where we are at this moment.

Similar conditions prevail in other cities. It would be rash for me to guess how many hundreds of thousands—no doubt literally millions—of New Yorkers have never been to Philadelphia, but I think I am perfectly safe in saying that there are scarcely any of them who would not feel a broadening influence in a trip here.

I am not by any means referring to people in destitute circumstances. I am speaking of people whose circumstances would warrant at least occasional travel. There are immense numbers of them, in every part of the country, who practically stay at home from one year's end to the other. They have the stay-at-home habit, just as a much smaller number have the travel habit. Your greatest work should be to try to increase the number of habitual travelers.

To accomplish this, it is not necessary for you to go about encouraging extravagance. The great majority of these people could, and with great advantage to themselves *should*, be made to see the value of travel to their minds and health, and to realize that an investment now and then in a railroad ticket would yield a good return.

You, who are designated as the traveling passenger agents of the railroads, are, of course, mostly concerned with travel over longer journeys than those I have mentioned, but precisely similar conditions prevail in your field to those existing in the more local field, and the opportunities for creative work are equally great, if not greater.

Don't think for one moment that because I have laid so much stress upon creating new business I would want to see an end of your purely competitive work, insofar as that is carried on in proper directions. Competition between the railroads with respect to the excellence of their service, the quickness of their managements to discern the true needs of the public, and the keenness of their soliciting forces in getting after business, are all invigorating and are of benefit to the railroads and their patrons alike. We need the stimulus of spirited rivalry.

But let your competition be always clean and fair and let your methods be always above suspicion. This is the second important point upon which I wished to speak to you. Remember that your competitor has a right to live as well as you, and upon equal terms. If you use such methods as to prevent him from enjoying this right, you invite, in fact you force him to adopt the sort of competition that we call destructive, and destructive competition is injurious to all concerned, including—in fact I may say, especially—the public.

We do not cut rates any more. Rate cutting has neither the sanction of public opinion nor of sound business practice. In your endeavors to obtain competitive traffic for your respective lines, therefore, let me suggest these guides to honorable action:

1. Never, to obtain business, violate the letter or spirit of any law or any principle of fair dealing.
2. Never use methods that you would be ashamed to have your competitor or your patrons learn of.
3. Never do anything that will lay you open to the charge of having unfairly discriminated between your patrons.
4. Never treat any one with discourtesy.

What, you may ask, are to be considered the fair methods of competition?

I would say that alertness and courtesy rank among the

fairest and most effective. Other things being equal, the first man on the job will get the business.

Know your own company and the selling points of its service.

Know your competitor, not to belittle its service, but to learn what your own company has that the other cannot offer. This will show you the kind of business that you can legitimately claim on superior merits.

See that the agents of foreign lines give your company proper representation, in their territory, on through business.

Remember that your own personal services to patrons, in giving information, arranging itineraries and suggesting worth-while tours, are part of the service that your company has to offer to the public and that its quality and value in influencing business are entirely in your own hands.

## WASHINGTON CORRESPONDENCE

WASHINGTON, D. C., January 2, 1917.

### SENATE COMMITTEE HEARINGS ON STRIKE LEGISLATION

With commercial and civic organizations demanding congressional action to protect the commerce of the country from the continued menace of a paralysis of transportation facilities by labor disputes, and organized labor voicing its determined opposition to any curtailment of its power to strike and to threaten strikes, the Senate Committee on Interstate Commerce on Tuesday began hearings on President Wilson's recommendations for additional legislation to supplement the Adamson eight-hour law.

Before the holidays many members of Congress had apparently hoped that some results would come from the negotiations between the railroads and the brotherhoods that would make it possible for Congress to dodge such a troublesome problem, but the abrupt termination of the conference in New York last week between the brotherhood leaders and the National Conference Committee of the Railways and the uncertainty as to the outcome of the Adamson law has served to emphasize to all the fact that the hasty passage of the law last summer merely postponed the real settlement of the wage controversy with the brotherhoods. While many members of Congress are under the influence of the labor organizations, afraid of them or otherwise opposed to a law to make strikes illegal pending a public investigation, the President has repeatedly indicated that he will insist on his program being carried out in spite of labor opposition, and he is understood to have made it plain to the administration leaders in Congress that he will call an extra session after March 4 if it is not accomplished before. The President emphasized his purpose by a visit to the capitol on Saturday for a conference with Senator Newlands, chairman of the Senate Committee on Interstate Commerce.

The committee has before it for consideration tentative bills prepared by Senator Newlands to prohibit railroad strikes pending an investigation and to empower the President to take over the railroads in case of military necessity, also an amendment proposed by Senator Newlands last summer to the Adamson law to make it a misdemeanor to obstruct the operation of trains. Senators Underwood and Hardwick have also introduced bills to give the Interstate Commerce Commission jurisdiction over wages and conditions of employment, and Senator Townsend a bill for a special commission to investigate labor disputes.

When the hearing was opened it was announced by Charles J. Faulkner for the railroads that it is not their purpose to appear in connection with the discussion of the principles proposed but might desire to be heard regarding detail provisions of any definite plan that may be formulated. E. J. MacNamara, vice-president of the Brotherhood of Locomotive Firemen and Enginemen, said he would advise the committee later whether the brotherhood executives would

appear or whether they would delegate representatives. Frank Morrison, secretary of the American Federation of Labor, stated that the federation desired to be heard "in opposition to any measure that carries with it compulsion of any character" and that President Gompers or some representative would appear. Andrew Furuseth, representing the seamen, said he desired also to oppose the principle of compulsion.

The committee had tentatively discussed allotting two days to representatives of the railroads, two to the labor organizations, and two to representatives of the general public. When the chairman called for representatives of the public, appearances were entered by Everett P. Wheeler, representing the industrial committee of the Reform Club of New York; F. W. Whitcher, of the Massachusetts State Board of Trade; Amos L. Hathaway, of the Boston Chamber of Commerce, who said he desired not to favor compulsory arbitration, but a plan to compel reference of industrial disputes to investigation until a report can be made. Elliott H. Goodwin, general secretary of the Chamber of Commerce of the United States, said its railroad committee had submitted a referendum to the membership which is now being voted on and asked the privilege of submitting the result to the committee. J. A. Emery appeared on behalf of the National Manufacturers' Association as representing both shippers and employers.

Mr. Whitcher and Mr. Wheeler addressed the committee briefly in support of the President's recommendations. Mr. Whitcher emphasized the serious effect of even a temporary cessation of transportation on New England, which he said is dependent upon outside sources for 75 per cent of its food supply, and urged the necessity of enacting laws which will prevent strikes. Mr. Wheeler advocated that such a plan be supplemented by provision for an industrial court to have jurisdiction over the enforcement and interpretation of arbitration awards.

After a short executive session the committee adjourned at noon until Wednesday morning.

Mr. Hathaway, representing the Boston Chamber of Commerce, addressed the committee on Wednesday in support of the president's recommendations and Judge W. L. Chambers, Commissioner of the Board of Mediation and Conciliation, urged that a provision for the enforcement and interpretation of arbitration awards be adopted.

**CARS AND LOCOMOTIVES ORDERED IN 1916**

Since the publication of the annual car and locomotive statistics in last week's issue, pages 1195 to 1206, there has come to the attention of the *Railway Age Gazette* additional information showing, among other things, additional orders for 19 locomotives, 4,730 freight cars and 4 passenger cars for domestic service, and 1,100 freight cars for export. These orders when added to the totals reported in last week's issue increase the figures for cars and locomotives ordered during the year 1916 to the amounts given in the following table:

ORDERS IN 1916.			
	Locomotives	Freight Cars	Passenger Cars
Domestic .....	2,910	170,054	2,544
Foreign .....	2,983	35,314	109
Total .....	5,893	205,368	2,653

Of the orders in question some were placed earlier in the year and came to the attention of the *Railway Age Gazette* in reports received from the railways or builders too late for insertion last week. The remainder are new orders placed between the time of going to press and the closing of the calendar year. The following lists also include a number of items marked with an asterisk which were included in last

week's totals but concerning which detailed information could not be given at that time.

LOCOMOTIVES—DOMESTIC

Purchaser	No.	Type	Builder
Atchison, Topeka & Santa Fe...	2	Mountain .....	Baldwin
*Brier Hill Steel Co.....	2	0-6-0 .....	Porter
Chic., Lake Shore & So. Bend...	2	Elec. freight.....	Westingh'se
Niagara Junction .....	1	Elec. switching.....	Westingh'se
Ogden, Logan & Idaho.....	3	Elec. freight.....	Westingh'se
<sup>1</sup> Pennsylvania R. R.....	1	Elec. freight.....	Westingh'se
	4	Mikado .....	Co. shops
	1	0-6-0 .....	Co. shops
	1	Decapod .....	Co. shops
<sup>1</sup> (These are additional to 180 engines reported last week.)			
Salt Lake & Utah.....	2	Elec. freight.....	Westingh'se
Union Carbide Co.....	1	Four-wheel tank.....	American
Youngstown & Ohio River.....	1	Elec. freight.....	Westingh'se
*Youngstown Sheet & Tube Co..	1	Switch .....	Porter
	1	Switch .....	Vulcan

LOCOMOTIVES—FOREIGN

**CORRECTION:** Through a typographical error in last week's issue, the Russian Government was incorrectly reported as having placed two orders for 350 gasoline locomotives with the Baldwin Locomotive Works. Only one of these lots was actually ordered and only one order was included in the totals.

FREIGHT CARS—DOMESTIC

Purchaser	No.	Kind	Builder
*Acadia Coal Company.....	150	Coal .....	Can. C. & F.
Ajax Gasoline Co.....	20	Tank .....	Gen'l Am.
*Anglo-Newfoundland Dev. Co...	12	Flat .....	Can. C. & F.
Anglo-Newfoundland Dev. Co...	12	Box .....	Can. C. & F.
Armour & Co.....	450	Refrig. ....	Co. shops
Atlantic Coast Line.....	100	Coal .....	Std. Steel
Baltimore & Ohio.....	1000	Hopper .....	Pullman
	1000	Hopper .....	Std. Steel
*Can. Government Rys.....	200	Stock .....	Can. C. & F.
*Can. Steel Foundries.....	1	Flat .....	Can. C. & F.
Chesapeake & Ohio.....	1000	Hopper .....	Std. Steel
Dold, Jacob, Packing Co.....	50	Refrig. ....	Am. C. & F.
*Dominion Bridge Co.....	2	Flat .....	Can. C. & F.
Donner Steel Co.....	4	Hopper .....	Cambria
	4	Gondola .....	Cambria
	4	Flat .....	Cambria
Donora Southern .....	10	Dump .....	Goodwin
*Imperial Oil Co., Ltd.....	25	Tank .....	Can. C. & F.
	20	Tank .....	Can. C. & F.
<sup>2</sup> Lackawanna Steel Co.....	300	Gondola .....	Cambria
<sup>2</sup> (Incorrectly reported in last week's issue as ordered from the Standard Steel Car Company.)			
Los Angeles & Salt Lake.....	100	Gen. service.....	West. Steel
Midvale Steel Co.....	1	Flat .....	Cambria
Moncton & Boctouche.....	1	Snow Plow.....	Can. C. & F.
New York, Phila. & Norfolk.....	5	Cabin .....	Pa. R. R.
Norfolk & Western.....	1	Dynamometer .....	Burr Co.
Pennsylvania R. R.....	1	Hopper .....	Co. shops
Republic Iron & Steel Co.....	160	Hopper .....	Cambria
Swift & Co.....	800	Refrig. ....	Co. shops
Wilmington Steel Co.....	3	Gondola .....	Cambria

FREIGHT CARS—FOREIGN

Purchaser	No.	Kind	Builder
Cuba Distilling Co.....	100	Tank .....	
*French State Rys.....	1000	Gondola .....	Can. C. & F.
<sup>3</sup> (This item was given in last week's issue as 2,000 cars. The other 1,000 cars were for the Paris-Orleans Railway.)			
*Paris-Orleans Ry. (France)....	1500	Gondola .....	Can. C. & F.
Paris-Orleans Ry. (France)....	500	Gondola .....	Can. C. & F.
Russian Government .....	500	Gondola .....	Std. Steel
*Russian Government .....	2000	Gondola .....	Am. C. & F.
<sup>4</sup> (Builder's name omitted in last week's issue.)			

PASSENGER CARS

Purchaser	No.	Kind	Builder
Pennsylvania R. R.....	2	Pass. refriger.....	Co. shops
	2	Bagg. & mail.....	Co. shops

**GERMAN ROLLING-STOCK SHORTAGE.**—A shortage in rolling-stock in Germany is indicated by the suggestion made in the North-German Gazette that Holland should send her own wagons to fetch coal from Germany.—*Railway Gazette, London.*

**THE MURMAN RAILWAY.**—On the occasion of the completion of the Murman Railway from Petrograd to the ice-free port of Alexandrovsk on the Arctic Ocean a Te Deum was celebrated at the point where the lines met, in the presence of General Prince Bagration Mukhranski, representing the Tsar, who travelled without break of journey from Petrograd to Romanoff, on the Murman coast, by the new line. In a telegram to the Tsar, Prince Bagration said that the construction of the most northerly railway in the world had been successfully completed despite the difficulties of working in a country of Polar nights, thanks to Russia's patriotic feeling and the desire to help the army.—*Railway Gazette, London.*



# General News Department

The Interstate Commerce Commission will hold a hearing in Washington January 29 on the tentative valuation reports of the Atlanta, Birmingham & Atlantic and the Texas Midland.

The New York, New Haven & Hartford announces that henceforth the prices of meals in dining cars will in all cases be by the card. The rate of \$1.25 for dinner, which has been in force for two or three years, has had to be abandoned because of the increasing cost of food.

The life insurance policies which the Union Pacific Railroad—and also the other two roads in the Union Pacific System—gave to employees as a New Year's gift were written by the Equitable Life Assurance Society of New York; and the health and disability risks are insured in the Continental Casualty Company, of Chicago.

The Railroad Commissioners of Texas threaten to prosecute the Texas & Pacific for alleged failure to deliver coal to consignees. It is understood that the shipments on which the prosecution is based were confiscated by the company for the use of its own locomotives. The commissioners have also expressed the intention of beginning a similar suit against the Kansas City, Mexico & Orient.

On December 1, for five years, the Southern Pacific took over the operation of the Sunset Railway, which is owned jointly by the Southern Pacific and the Atchison, Topeka & Santa Fe. This is in accordance with an agreement between the owning companies, the Santa Fe having operated the road for the past five years. The Sunset is the only railroad between Bakersfield, Cal., and the cities of the West Side: oil fields. It runs between Gosford and Maricopa and Pentland Junction and Monarch.

An Ottawa correspondent writes that thus far the tearing-up of rails on Canadian railroads to furnish track material for use in France has been confined mainly to yards and sidings on government lines. Operations on private-owned roads will begin later. The scarcity of vessels limits the speed with which the work can be carried on; and it is estimated that not over 600 miles of track can be carried across the Atlantic within the time designated by the French government. The first shipment (20 miles) was made up mainly of spare materials from the government lines. The rails now being loaded are mostly heavy sections, having come from tracks laid within the past five years.

General Manager S. C. Long, of the Pennsylvania Railroad, on December 31 sent out the customary New Year's greeting to the employees, thanking them, on behalf of the president and executive officers, for having made possible the achievements of the year now closed. The company carried more passengers and more freight than ever before in twelve months' time; and, says the message, "we are particularly proud and deeply thankful for the fact that we have closed another year—the fourth in succession—in which no passenger on the Pennsylvania Railroad has lost his life in a train accident." The entire Pennsylvania Railroad system, taking into account every affiliated company either east or west of Pittsburgh, now has to its credit three full calendar years in which no passenger has been killed as a result of a train accident. During this period 553,890,063 passengers have been carried a total distance of approximately fifteen billions of miles, or 150 times as far as the sun is from the earth.

## I. C. C. Modifies Headlight Order

As a result of hearings before the Interstate Commerce Commission in November at the request of the railways that they might present additional evidence giving the results of headlight tests, the commission has issued a modification of rules 29 and 31 of its order regarding the use of locomotive headlights, and postponed the effective date from January 1 to July 1. Rule 29, applying to locomotives in road service, is amended to provide that "each locomotive used in road service between sunset

and sunrise shall have a headlight which shall afford sufficient illumination to enable a person in the cab of such locomotive, who possesses the usual visual capacity required of locomotive enginemen, to see in a clear atmosphere a dark object as large as a man of average size standing erect at a distance of at least 800 feet ahead and in front of such headlight; and such headlight must be maintained in good condition." This makes the language more specific than in the previous form of the order, and reduces the distance requirement from 1,000 feet. Rule 31, applying to locomotives in yard service, provides that two lights shall be used, giving sufficient illumination to see the object for a distance of 300 feet. These rules apply to locomotives constructed after July 1. For locomotives constructed prior to that date the changes required are to be made the first time they are shopped for general repairs after that date, and all locomotives must be so equipped before July 1, 1920.

## Moving Troops to the Mexican Border

The American Railway Association, in Bulletin 5, issued last Wednesday, gives abstracts from the annual report of Brigadier-General Henry G. Sharpe, acting quartermaster-general of the United States Army, in which he tells about the efficient work done by the railways carrying the troops to the Mexican border. An abstract of this part of General Sharpe's report was also published in last week's *Railway Age Gazette*, page 1207.

## Freight Congestion in West Still Acute

The congestion of western terminals, noted in the *Railway Age Gazette* of December 29, is still acute. Conflicting advices from railroads operating in this territory make it doubtful whether the situation has improved appreciably since a week ago. In the Chicago switching district, at the time of writing, there are standing on the tracks approximately 6,000 eastbound cars, which are blocked by embargoes placed by eastern railroads. One large western road, with over 2,000 cars on its lines consigned to eastern points, 1,000 of which were in Chicago, disposed of 300 of these cars in one day last week. A Chicago terminal railroad, which had 900 eastbound cars on its tracks on December 26, reduced the number to 450 by December 30. On the contrary, another road reported that the situation was growing steadily worse, and that on December 30 it had 1,300 cars on its Chicago tracks consigned to eastern points. Other carriers stated that they were gradually disposing of some eastbound cars as temporary openings in the eastern embargoes appeared, but that this advantage was balanced by the continued flow of cars from western points, which had started moving before wide restrictions had been placed on freight for the East.

As far as possible, eastbound cars affected by embargoes have been held on sidings outside of Chicago; nevertheless, the belt and switching lines are still blocked with cars to such an extent that deliveries from one road to another are made with difficulty. Some cars destined to the East have been disposed of through other gateways—Springfield, Bloomington, Peoria and Joliet. A large carrier reported that 200 of its cars loaded with cotton and lumber were held at Memphis, Tenn., because of the inability of eastern connections to take them. The St. Louis terminals were also badly tied up at the time of writing.

Although the passing of the heavy holiday business relieved the railroads of considerable pressure, and two consecutive holidays at the beginning of the year permitted them, in a measure, to catch up with their business, the continued low temperatures and heavy snow storms have made train operation difficult. The shortage of fuel has not been such a threatening factor as far as locomotive operation is concerned, since in recognition of the emergency western railroads have given special attention to the movement of coal. It is reported that the motive power of one large railroad has been crippled because boiler inspectors of the Interstate Commerce Commission have ordered the withdrawal of a large number of locomotives from service.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF OCTOBER, 1916

Table with columns: Name of road, Average mileage operated during period, Operating revenues (Freight, Passenger, Total), Maintenance of Way and Equipment, Traffic, Transportation, Miscellaneous, General, Total, Net from railway operation, Taxes, Operating income (or loss), Increase (or decrease) comp. with last year.

MONTH OF NOVEMBER, 1916

Table with columns: Name of road, Average mileage operated during period, Operating revenues (Freight, Passenger, Total), Maintenance of Way and Equipment, Traffic, Transportation, Miscellaneous, General, Total, Net from railway operation, Taxes, Operating income (or loss), Increase (or decrease) comp. with last year.

**Protest Against Proposed Increase in Second Class Mail Rates**

A committee of editors representing technical, scientific, professional and trade journals of The Associated Business Papers has sent to Congress a strong protest against the zone system of rates for second-class mail matter, proposed in a rider on the pending post office appropriation bill. This protest says, in part:

The chief ground of our opposition is that the effect of this measure would be to destroy one of the strongest forces that have operated to produce national unity. The circulation of national journals has tended to develop common thoughts and ideals in all parts of the United States, and to break down sectional barriers. Under the zone system the postage on all publications sent more than 600 miles would be three to six times the present rate. The inevitable effect would be the practical suppression of journals of national circulation. Some additional grounds are:

"1. It would discriminate against the farmer, the lumberman, the miner, the merchant, the manufacturer, the physician, the engineer in the remote sections of the country, by charging a high postal rate on information essential to their calling. Every dollar added to the price of a magazine narrows the circle of readers.

"2. It would place a crippling tax on the periodical press, which, next to the schools themselves, is the greatest educational power in the country.

"3. It would seriously retard our development by restricting the spread of essential information. This would result in a tremendous annual loss, far greater than the expected revenue.

"4. It would place a drastic tax on the widely circulated journals of the great scientific and engineering societies, whose members serve without pay on the Industrial Preparedness Committee and in the work of the National Research Council.

"5. It is based on the erroneous assumption that postal expenses increase in proportion to distance. Sir Rowland Hill showed, in 1837, that, even with the crude transportation of those days, terminal expense was 90 per cent of the whole cost of mail service.

"6. It would fail to accomplish the object intended."

The committee consists of Charles Whiting Baker, Engineering News; S. H. Ditchett, Dry Goods Economist; A. I. Findley, Iron Age; Roy V. Wright, *Railway Age Gazette*, and E. J. Mehren (chairman), Engineering Record.

**Wood Preservers' Convention**

The thirteenth annual convention of the American Wood Preservers' Association will be held at the Hotel Astor, New York, January 23, 24 and 25. The following is the program so far as it has been arranged:

- TUESDAY, 10 A. M.
- Address of Welcome.....Mayor John P. Mitchell  
 President's Address.....Carl G. Crawford  
 Reports of Officers and Communications.
- TUESDAY, 2 P. M.
- Reports of Committees:  
 Publicity, Promotion and Education.....E. A. Sterling, chairman  
 Service Tests of Ties and Structural Timber...C. P. Winslow, chairman  
 Terminology.....J. B. Card, chairman
- Illustrated Talk:  
 The Bad and the Good in the Handling of Wood.....J. H. Waterman
- WEDNESDAY, 10 A. M.
- Reports of Committees:  
 Plant Operation.....A. L. Kuchu, chairman  
 Preservatives.....E. B. Fulks, chairman
- WEDNESDAY, 2 P. M.
- Paper: Grouping Woods for Preservative Treatment.....C. P. Winslow  
 Report of Committee:  
 Purchase and Preservation of Structural Timber...A. B. Joyce, chairman
- EVENING
- Informal Banquet at 6:30.
- THURSDAY, 10 A. M.
- Reports of Committee:  
 Service Tests of Wood Block Paving.....C. H. Teesdale, chairman
- THURSDAY AFTERNOON
- Business Session.  
 Election and Installation of New Officers.

**Electrical Engineers to Meet In Pittsburgh**

The American Institute of Electrical Engineers will hold its next meeting in Pittsburgh, January 12, 1917, with headquarters at the Fort Pitt Hotel.

Following the policy adopted a short time ago, the institute, instead of confining its session to one annual meeting during the

year, has decided to hold several meetings at stated intervals in various parts of the country.

The Pittsburgh meeting will be devoted to a discussion of "Braking Electric Vehicles by Regeneration," and the paper on this subject will be presented by R. E. Hellmund, of the Westinghouse Electric & Manufacturing Company.

The meeting will be presided over by Harold W. Buck, of New York, president of the institute. Several hundred delegates are expected to attend. The morning will be devoted to a meeting of the board of directors, and the afternoon to an excursion to the various industrial plants in the Pittsburgh district. The session of the institute will be held in the English Room of the Fort Pitt Hotel in the evening, preceded by an informal dinner.

**MEETINGS AND CONVENTIONS**

The following list gives names of secretaries, dates of next or regular meetings and places of meetings.

- AIR BRAKE ASSOCIATION.—F. M. Nellis, Room 3014, 165 Broadway, New York City. Next annual convention, May 1-4, 1917, Memphis, Tenn.
- AMERICAN ASSOCIATION OF DEMURRAGE OFFICERS.—F. A. Pontious, 455 Grand Central Station, Chicago. Next meeting, January, 1917, New York.
- AMERICAN ASSOCIATION OF DINING CAR SUPERINTENDENTS.—H. C. Boardman, D. L. & W., Hoboken, N. J. Next convention, October, 1917, San Francisco, Cal.
- AMERICAN ASSOCIATION OF FREIGHT AGENTS.—R. O. Wells, Illinois Central, East St. Louis, Ill. Next meeting, June, 1917, Denver.
- AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York.
- AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—E. H. Harman, Room 101, Union Station, St. Louis, Mo. Annual meeting, August 8-10, 1917, Minneapolis, Minn.
- AMERICAN ELECTRIC RAILWAY ASSOCIATION.—E. B. Burritt, 8 W. 40th St., New York.
- AMERICAN ELECTRIC RAILWAY MANUFACTURERS' ASSOCIATION.—H. G. McConaughy, 165 Broadway, New York.
- AMERICAN RAILROAD MASTER TINNERS', COPPERSMITHS' AND PIPEFITTERS' ASSOCIATION.—W. E. Jones, C. & N. W., 3814 Fulton St., Chicago.
- AMERICAN RAILWAY ASSOCIATION.—J. E. Fairbanks, general secretary, 75 Church St., New York.
- AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W., Chicago. Next convention, October 16-18, 1917, St. Paul, Minn.
- AMERICAN RAILWAY ENGINEERING ASSOCIATION.—E. H. Fritch, 900 S. Michigan Ave., Chicago. Next convention, March 20-22, 1917, Chicago.
- AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.—J. W. Taylor, 1112 Karpen Bldg., Chicago. Next meeting, June, 1917, Atlantic City, N. J.
- AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—Owen D. Kinsey, Illinois Central, Chicago.
- AMERICAN SOCIETY FOR TESTING MATERIALS.—Prof. E. Marburg, University of Pennsylvania, Philadelphia, Pa.
- AMERICAN SOCIETY OF CIVIL ENGINEERS.—Chas. Warren Hunt, 220 W. 57th St., New York. Regular meeting, 1st and 3d Wednesday in month, except July and August, 220 W. 57th St., New York.
- AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York.
- AMERICAN WOOD PRESERVERS' ASSOCIATION.—F. J. Angier, Supt. Timber Preservation, B. & O., Mt. Royal Sta., Baltimore, Md. Next convention, January 23-25, 1917, New York.
- ASSOCIATION OF AMERICAN RAILWAY ACCOUNTING OFFICERS.—E. R. Woodson, Rooms 1116-8 Woodward Bldg., Washington, D. C. Annual meeting, May 30, 1917, Richmond, Va.
- ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS.—George W. Lyndon, 1214 McCormick Bldg., Chicago. Semi-annual meeting with Master Car Builders' Association.
- ASSOCIATION OF RAILWAY CLAIM AGENTS.—Willis H. Failing, Terminal Station, Central of New Jersey, Jersey City, N. J. Next meeting, May, 1917, Louisville, Ky.
- ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W., Room 411, C. & N. W. Sta., Chicago.
- ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.—W. L. Connelly, Superintendent of Telegraph, Indiana Harbor Belt, Gibson, Ind. Next annual meeting, September 18-20, 1917, Washington, D. C.
- ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.—G. P. Conard, 75 Church St., New York.
- BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—Tom Lehon, The Lehon Company, Chicago. Meetings with American Railway Bridge and Building Association.
- CANADIAN RAILWAY CLUB.—James Powell, Grand Trunk, P. O. Box 7, St. Lambert (near Montreal), Que. Regular meetings, 2d Tuesday in month, except June, July and August, Windsor Hotel, Montreal, Que.
- CANADIAN SOCIETY OF CIVIL ENGINEERS.—Clement H. McLeod, 176 Mansfield St., Montreal, Que. Regular meetings, 1st Thursday in October, November, December, February, March and April. Annual meeting, January, Montreal.
- CAR FOREMAN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 841 Lawlor Ave., Chicago. Regular meetings, 2d Monday in month, except June, July and August, Hotel La Salle, Chicago.
- CENTRAL RAILWAY CLUB.—H. D. Vought, 95 Liberty St., New York. Regular meetings, 2d Friday in January, May, September and November. Annual dinner, 2d Thursday in March, Hotel Statler, Buffalo, N. Y.
- CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S ASSOCIATION.—W. R. McMunn, New York Central, Albany, N. Y.
- CINCINNATI RAILWAY CLUB.—H. Boutet, Chief Interchange Inspector, Cincinnati, 101 Carew Bldg., Cincinnati. Regular meetings, 2d Tuesday, February, May, September and November, Hotel Sinton, Cincinnati.
- ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA.—Elmer K. Hiles, 2511 Oliver Bldg., Pittsburgh, Pa. Regular meetings, 1st and 3d Tuesday, Pittsburgh, Pa.
- FREIGHT CLAIM ASSOCIATION.—Warren P. Taylor, Traffic Manager, R. F. & P., Richmond, Va. Annual convention, June 19, 1917, Banff, Alberta.

**GENERAL SUPERINTENDENTS' ASSOCIATION OF CHICAGO.**—A. M. Hunter, 321 Grand Central Station, Chicago. Regular meetings, Wednesday, preceding 3d Thursday in month, Room 1856, Transportation Bldg., Chicago.

**INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.**—A. L. Woodworth, C. H. & D., Lima, Ohio. Next annual meeting, August, 1917, Chicago.

**INTERNATIONAL RAILWAY FUEL ASSOCIATION.**—J. G. Crawford, C. B. & O. R. R., 702 E. 51st St., Chicago. Next meeting, May 14-17, 1917, Hotel Sherman, Chicago.

**INTERNATIONAL RAILWAY GENERAL FOREMAN'S ASSOCIATION.**—Wm. Hall, 1126 W. Broadway, Wingna, Minn.

**MAINTENANCE OF WAY AND MASTER PAINTERS' ASSOCIATION OF THE UNITED STATES AND CANADA.**—F. W. Hager, Fort Worth & Denver City, Fort Worth, Tex.

**MASTER BOILER MAKERS' ASSOCIATION.**—Harry D. Vought, 95 Liberty St., New York. Annual convention, May 22-25, 1917, Hotel Jefferson, Richmond, Va.

**MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION OF THE UNITED STATES AND CANADA.**—A. P. Dane, B. & M., Reading, Mass. Next annual meeting, September 11, 1917, Chicago.

**MASTER CAR BUILDERS' ASSOCIATION.**—J. W. Taylor, 1112 Karpen Bldg., Chicago. Next meeting, June, 1917, Atlantic City, N. J.

**NATIONAL ASSOCIATION OF RAILWAY COMMISSIONERS.**—Wm. H. Connolly, 1319 Columbia Road, Washington, D. C. Next annual convention, October 16, 1917, Washington, D. C.

**NATIONAL RAILWAY APPLIANCES ASSOCIATION.**—C. W. Kelly, 349 Peoples Gas Bldg., Chicago. Next convention, March 19-22, 1917, Chicago.

**NEW ENGLAND RAILROAD CLUB.**—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meeting, 2d Tuesday in month, except June, July, August and September, Boston.

**NEW YORK RAILROAD CLUB.**—Harry D. Vought, 95 Liberty St., New York. Regular meetings, 3d Friday in month, except June, July and August, 29 W. 39th St., New York.

**NIAGARA FRONTIER CAR MEN'S ASSOCIATION.**—E. N. Frankenberger, 623 Brisbane Bldg., Buffalo, N. Y. Meetings 3d Wednesday in month, New York Telephone Bldg., Buffalo, N. Y.

**PEORIA ASSOCIATION OF RAILROAD OFFICERS.**—F. C. Stewart, 410 Masonic Temple Bldg., Peoria, Ill. Regular meetings, 3d Thursday in month, Jefferson Hotel, Peoria.

**RAILROAD CLUB OF KANSAS CITY.**—Claude Manlove, 1008 Walnut St., Kansas City, Mo. Regular meetings, 3d Saturday in month, Kansas City.

**RAILWAY BUSINESS ASSOCIATION.**—Frank W. Noxon, 30 Church St., New York. Annual meeting, January 16, 1917, Waldorf-Astoria Hotel, New York.

**RAILWAY CLUB OF PITTSBURGH.**—J. B. Anderson, Room 207, P. R. R. Sta., Pittsburgh, Pa. Regular meetings, 4th Friday in month, except June, July and August, Pittsburgh Commercial Club Rooms, Colonial-Annex Hotel, Pittsburgh.

**RAILWAY DEVELOPMENT ASSOCIATION.**—D. C. Welty, Commissioner of Agriculture, St. L., Iron Mt. & So., 1047 Railway Exchange Bldg., St. Louis. Annual meeting, May 9-11, 1917, Louisville, Ky.

**RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.**—J. Scribner, 1063 Monadnock Block, Chicago. Meetings with Association of Railway Electrical Engineers.

**RAILWAY FIRE PROTECTION ASSOCIATION.**—C. B. Edwards, Office of the President's Assistant, Seaboard Air Line, Norfolk, Va.

**RAILWAY REAL ESTATE ASSOCIATION.**—R. H. Morrison, Assistant Engineer, C. & O., Richmond, Va. Next convention, October, 1917, Duluth, Minn.

**RAILWAY SIGNAL ASSOCIATION.**—C. C. Rosenberg, Myers Bldg., Bethlehem, Pa. Next annual convention, September, 1917, Atlantic City, N. J.

**RAILWAY STOREKEEPERS' ASSOCIATION.**—J. P. Murphy, N. Y. C. R. R., Box C, Collinwood, Ohio.

**RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.**—J. D. Conway, 2136 Oliver Bldg., Pittsburgh, Pa. Meetings with Master Car Builders' and Master Mechanics' Associations.

**RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.**—G. A. Nelson, 50 Church St., New York. Meetings with Association of Railway Telegraph Superintendents.

**RICHMOND RAILROAD CLUB.**—F. O. Robinson, C. & O., Richmond, Va. Regular meetings, 2d Monday in month, except June, July and August.

**ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.**—P. J. McAndrews, C. & N. W., Sterling, Ill. Next annual convention, September 18-21, 1917, Chicago.

**ST. LOUIS RAILWAY CLUB.**—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings, 2d Friday in month, except June, July and August, St. Louis.

**SALT LAKE TRANSPORTATION CLUB.**—R. E. Rowland, David Keith Bldg., Salt Lake City, Utah. Regular meetings, 1st Saturday of each month, Salt Lake City.

**SIGNAL APPLIANCE ASSOCIATION.**—F. W. Edmunds, 3868 Park Ave., New York. Meetings with annual convention Railway Signal Association.

**SOCIETY OF RAILWAY FINANCIAL OFFICERS.**—L. W. Cox, N. & W., Philadelphia, Pa.

**SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.**—E. W. Sandwich, A. & W. P. R. R., Atlanta, Ga.

**SOUTHERN & SOUTHWESTERN RAILWAY CLUB.**—A. J. Merrill, Grant Bldg., Atlanta, Ga. Regular meetings, 3d Thursday, January, March, May, July, September, November, 10 a. m., Piedmont Hotel, Atlanta.

**TOLEDO TRANSPORTATION CLUB.**—Harry S. Fox, Toledo, Ohio. Regular meetings, 1st Saturday in month, Boody House, Toledo.

**TRACK SUPPLY ASSOCIATION.**—W. C. Kidd, Ramapo Iron Works, Hillburn, N. Y. Meetings with Roadmasters' and Maintenance of Way Association.

**TRAFFIC CLUB OF CHICAGO.**—W. H. Wharton, La Salle Hotel, Chicago.

**TRAFFIC CLUB OF NEW YORK.**—C. A. Swope, 291 Broadway, New York. Regular meetings, 1st Tuesday in month, except June, July and August, Waldorf-Astoria Hotel, New York.

**TRAFFIC CLUB OF PITTSBURGH.**—D. L. Wells, Gen'l Agt., Erie R. R., 1924 Oliver Bldg., Pittsburgh, Pa. Meetings bi-monthly, Pittsburgh.

**TRAIN DESPATCHERS' ASSOCIATION OF AMERICA.**—J. F. Mackie, 7122 Stewart Ave., Chicago. Next meeting, June 19, 1917, Fresno, Cal.

**TRANSPORTATION CLUB OF DETROIT.**—W. R. Hurley, Superintendent's office, N. Y. C. R. R., Detroit, Mich. Meetings monthly, Normandie Hotel, Detroit.

**TRAVELING ENGINEERS' ASSOCIATION.**—W. O. Thompson, N. Y. C. R. R., Cleveland, Ohio.

**WESTERN ASSOCIATION OF SHORT LINE RAILROADS.**—Clarence M. Oddie, Mills Bldg., San Francisco.

**WESTERN CANADA RAILWAY CLUB.**—L. Kon, Immigration Agent, Grand Trunk Pacific, Winnipeg, Man. Regular meetings, 2d Monday, except June, July and August, Winnipeg.

**WESTERN RAILWAY CLUB.**—J. W. Taylor, 1112 Karpen Bldg., Chicago. Regular meetings, 3d Monday in month, except June, July and August, Hotel Sherman, Chicago.

## Traffic News

The tenth annual dinner of the Traffic Club of Chicago will be held in the Hotel La Salle on January 24.

The Southern Railway Company reports that the cotton used by mills in the southern states in the four months ending with November amounted to 1,275,964 bales, an increase of 18.05 per cent over the corresponding period last year.

Following the example of the Western and Official classification committees, the executive committee of the Southern Classification Committee, at a recent meeting decided to reduce its membership to three permanent members, with W. R. Powe as chairman.

The application of the railroads of Illinois for injunctions to prevent the State Utilities Commission from interfering with the 2.4 cent passenger tariffs recently filed was the subject of a hearing before the United States District Court at Chicago on Wednesday.

At the recent annual meeting of the ways and means committee of the Chicago Association of Commerce, James Webster, assistant freight traffic manager of the New York Central Lines west of Buffalo, was elected chairman of division No. 17, the committee on railroads, and A. C. Johnson, general traffic manager, Chicago & North Western, was elected vice-chairman on the same committee for the coming year.

The Louisville & Nashville, on December 30, placed an embargo on freight northbound through Louisville and Cincinnati for points in Ohio, Michigan, Pennsylvania and all the eastern states. The order exempts livestock, perishable freights and coal for public utility plants. The Louisville & Nashville, on the date named, had in its yards 2,000 loaded cars which could not be forwarded because of the refusal of eastern lines to accept them.

The Southern Railway reports that in every southern state traversed by the company's lines, except Kentucky and Tennessee, the acreage of winter wheat reported sown this year shows a substantial increase over last year. The largest increases are shown in Georgia, Alabama and Mississippi—states into which the cotton boll weevil has spread. Georgia and Alabama show increases of 13 per cent over last year, while Mississippi, which has heretofore grown little wheat, shows an increase of 157 per cent. These increases, with increases in other crops and improvement, in the quality of farm animals show that southern farmers are making real progress in diversification.

The Canadian Northern Railway has commenced the active development of natural resources along the 543 miles of its line from Port Arthur to Sudbury, Ontario. Maps of the mineral lands are being distributed to prospectors. The timber resources of spruce and other woods have been inventoried, and a classification of agricultural soils placed at the disposal of settlers. Following out the company's policy of creating a labor and produce market for settlers every 20 miles throughout the clay belt, it is planned to buy each year all the railway ties that can be produced along this line. Three million ties will be needed for the new French railways, and it is expected that this section will furnish much of the material. It is also estimated that 60,000 cords of pulpwood will be taken out annually.

A recent circular sent out by the Northern Pacific and signed by George T. Slade, first vice-president, and J. G. Woodworth, second vice-president, reads in part as follows: Commercial prosperity without adequate transportation is impossible, and at the present time the railroad transportation facilities of the United States are wholly inadequate; therefore any shipper who underloads or delays a freight car or fails to make any possible readjustment of his business, which will lighten the burden now placed upon the railroads, is not only dealing unfairly with the carriers, but is also embarrassing the business of the nation, including his own. This company owns 48,000 freight cars, and it would require at least one year's time and \$7,000,000 to build 4,800 more cars, but, with the co-operation of shippers, we

could in one month, and without any expenditure of money, show an increase of 10 per cent in the average loading of cars now employed; and in connection with the movement of certain commodities it would be possible to increase the loading as much as 25 or even 50 per cent.

**Increased Car Loading on the Southern Pacific**

An analysis of car loading statistics by C. J. McDonald, assistant superintendent of transportation of the Southern Pacific, for the month of October, shows some interesting results obtained. In the table below commodities of which more than 500 cars were loaded during the month are shown, together with total of all commodities. The first column shows increased tons of the commodity loaded in each car shipped during that month, and the second shows the number of cars saved. Thus a large volume of business was marketed, due directly to more efficient car loading than would otherwise have been moved.

	Tons per car	Cars saved		Tons per car	Cars saved
Barley .....	3.4	118	Mill stuff .....	1.8	110
Beans and peas.....	0.8	19	Fruits and vegetables..	0.2	84
Beets .....	4.0	758	Other perishables ....	1.3	292
Canned goods .....	1.7	96	Potatoes .....	1.3	63
Cement, etc. ....	2.9	112	Stone and gravel.....	0.2	313
Corn and oats.....	6.5	158	Sugar .....	0.8	30
Dried fruits .....	0.0	0	Wheat .....	2.3	56
Hay .....	0.5	76	Wines and liquors....	1.5	65
Lumber .....	2.0	813			
Merchandise .....	1.1	2,535	Total .....	1.1	3,978

**Massachusetts Calls for Federal Legislation**

The Massachusetts State Board of Trade, at a meeting in Springfield December 29, attended by about 300 business men from 46 cities, adopted resolutions favoring the retention by the New York, New Haven & Hartford Railroad of its steamboat lines on Long Island sound; calling for a federal law giving the Interstate Commerce Commission more complete authority in fixing rates, and full authority in the issuance of all railroad securities; and declaring in favor of the compulsory investigation of railroad labor disputes, as recommended by President Wilson.

The meeting was presided over by the governor of the state, Samuel W. McCall, and one of the principal speakers was Howard Elliott, president of the New Haven road. Mr. Elliott spoke in favor of amendment of the laws to simplify the work of the Interstate Commerce Commission, and to relieve the over-burdened commissioners; to establish regional regulating bodies, and to increase the power of the federal authority where state and federal interests conflict.

G. L. Graham, traffic manager of the National Association of Wool Manufacturers, spoke in favor of the retention of water lines by railroad companies. New England is interested not only in the lines on Long Island sound, but also in those on the Great Lakes, which have been instrumental in keeping down the rates of transportation for the products of New England sent to the Western states.

Dr. Victor S. Clark, of the Carnegie Institute, Washington, described the Canadian compulsory investigation law. Such a law is not a panacea; but it does compel delay when delay is of advantage to the public interests. In Canada no change can be made in pay or working conditions except on 30 days' notice. If the parties do not agree within 30 days, they must appeal to the Ministry of Labor, and a board of three investigators is appointed. As a last resort, this board acts as a court of inquiry and makes its findings public. Until this is done, a strike or a lockout is illegal. Two important needs, however, are not mentioned by this law; first, the difficulty of finding arbitrators who are acquainted with the details of the industries which are to be investigated, and second, the need of an impartial body to interpret and administer an award after it has been made.

John F. Tobin opposed compulsory investigation; it gives the employer too much time to prepare. He also opposed some of the "welfare" operations which now are so popular. Instead of putting your money into bath tubs and libraries for your employees, said Mr. Tobin, put it into the pay envelope each week. How would the employer like it if the employee presented him with a bath tub, on the assumption that it was the duty of the employee to decide how clean the employer should keep himself in order to promote his health?

**Commission and Court News**

**INTERSTATE COMMERCE COMMISSION**

The commission has suspended from January 1 until May 1 tariffs naming increased reshipping rates on grain from Chicago and Detroit to certain destinations in Canada.

The commission on its own motion has ordered a general investigation into the rates and regulations for the transportation of potatoes from Michigan, Wisconsin and Minnesota and other places to points in Western Trunk Line territory and south thereof.

The commission has suspended from January 1 and later dates until May 1, tariffs providing for the assessment at St. Louis, Mo.; East St. Louis, Ill., and certain other points of track storage charges in addition to the regular demurrage charges. The tariffs provided for a charge of \$1 per car per day for the first two days after the expiration of free time, and of \$2 a day for each succeeding day.

**Sulphuric Acid from New Orleans**

*New Orleans Joint Traffic Bureau. Opinion by Commissioner Clark:*

Proposed increased rates on sulphuric acid in tank-car loads from New Orleans, La., to New York, N. Y., and other eastern points not justified. Proposed rate to Hopewell, Va., justified. (42 I. C. C., 200.)

**Unreasonable Rates from Thompson's Point**

*E. I. Du Pont De Nemours Powder Company v. Philadelphia & Reading et al. Opinion by the Commission:*

Rates charged on less-than-carload shipments of lead tanks, stoneware, machinery and narrow-gage flat cars from Thompson's Point, N. J., to Birmingham, Ala., found to have been unreasonable and reparation awarded. Reasonable maximum ratings and rates on lead tanks, not nested, and narrow-gage flat cars prescribed for the future. (41 I. C. C., 725.)

**New York Commutation Fares**

*Opinion by Commissioner McChord:*

The New York Central and West Shore, having had considerable trouble with scalping of 60-trip monthly commutation tickets out of New York, proposed to enforce a rule reading as follows:

Improper use of tickets: (a) In consideration of the reduced rate at which monthly and school commutation tickets are sold, their limitations must be strictly observed, and no monthly or school commutation ticket will be sold to any person who, having previously purchased such a ticket, shall have used it, or permitted it to be used, in violation of the provisions therein contained.

The commission finds that this rule would be unlawful. (42 I. C. C., 354.)

**STATE COMMISSIONS**

The State Public Utilities Commission of Illinois will hold a hearing at Chicago on January 5, to consider proposed changes in charges by railroads for the reconsignment of cars.

The Public Utilities Commission of Colorado has issued an order requiring that annual reports of all carriers, and all public utilities, shall be made for the year ending December 31, 1916, and for each calendar year thereafter. Beginning with the present month, the commission requires the accounts of all carriers to be kept according to the uniform system prescribed by the Interstate Commerce Commission. This applies also to electric and suburban railways.

The New Mexico Corporation Commission is receiving memorials from the seven railroads operating in that state, voicing strong and united opposition to the proposed plan of the commission to reduce passenger rates generally to 3 cents a mile. The commission issued a notice requiring the roads to appear before it, and show cause why the fare should not be thus

reduced. In a brief, which the Atchison, Topeka & Santa Fe has filed with the commission, it is stated that the average cost of hauling intrastate passengers is 4.30 cents a mile.

### PERSONNEL OF COMMISSIONS

Amos A. Betts, who was elected a member of the Arizona Corporation Commission at the recent election, as announced in our issue of December 22, page 1154, was born at Laddonia, Mo., on May 23, 1873. He entered railway service as a telegraph operator with the Chicago & Alton in 1890, being employed in this position and as agent at Alton, Ill.; East St. Louis and other stations, until 1897, when he entered the service of the Denver & Rio Grande in the same capacity. From 1904 to 1908, he was cashier of a bank at Fruita, Colo. In the latter year he entered the employ of the Santa Fe, Prescott & Phoenix as assistant city ticket agent at Phoenix, Ariz., later being promoted to soliciting freight and passenger agent, then to traveling freight and passenger agent, and later to chief clerk in the office of the assistant general freight and passenger agent. On February 1, 1915, he was appointed rate expert for the Arizona Corporation Commission, which position he held at the time of his election, as noted above.



A. A. Betts

### COURT NEWS

#### "Depot"

The Texas Court of Civil Appeals holds that neither a store building of an individual authorized to sell tickets and handle freight, wherein seats are installed for waiting passengers, nor a box car on trucks from which tickets are sold, and in which passengers wait and freight is stored, is a depot, so as to require installation of comfort stations in accordance with the Texas statute.—*Ft. Worth & D. C. v. (Tex.)*, 189 S. W., 131.

#### Want of Headlight

Although the Oklahoma statutes make it gross negligence and a criminal offense to run a train at night without a headlight, the Supreme Court of the State holds that there can be no recovery for a death caused by being struck by such train unless the negligence was the proximate cause of the death, and in an action for such death the plaintiff has the burden of proving this. Three elements are essential to constitute "actionable negligence": The existence of a duty, failure to perform it, and injury proximately resulting from such failure.—*Kansas City Southern v. Langley (Okla.)*, 160 Pac., 451.

#### Opinion Evidence

In an action for damages against a railroad company for flooding adjoining land, the trial court, over objections, permitted witnesses for the plaintiff to testify as to the amount of damages he had sustained. The Oklahoma Supreme Court holds this to be error; and that the witnesses should have been required to state the facts, and not their conclusions as to the amount of the damage.—*K. C. S. v. Hursley (Okla.)*, 160 Pac., 910.

#### Dipping Cattle

In an action for damages against a railroad for negligence in failing to water cattle before dipping them in compliance with established quarantine regulations, the plaintiff contended that the contract for dipping was an oral contract independent

of the shipping contract, and the trial court excluded the latter as evidence when set up as a defense to the action. The Oklahoma Supreme Court declares this to be prejudicial error, holding that the dipping is a part of the service required by the shipping contract, and the question of negligence in the performance of this service must be measured by the terms of that contract. Judgment for the plaintiff was therefore reversed.—*M. K. & T. v. Skinner (Okla.)*, 160 Pac., 875.

#### Recent Decisions Under the Federal Employers' Liability Act

The Wisconsin Supreme Court holds that one who performs work in putting prospective subjects of interstate commerce in a state of preparedness for transportation is not engaged in interstate commerce within the meaning of the act.—*Sullivan v. Chicago, M. & St. P. (Wis.)*, 158 N. W., 321.

The Circuit Court of Appeals, Sixth Circuit, holds that a carpenter, riding on a train which carried the equipment for repair of a bridge used by a railroad company engaged in interstate commerce is, when the repairs were to be made by him, engaged in interstate commerce.—*Grand Trunk v. Knapp*, 233 Fed., 950.

The Circuit Court of Appeals, Ninth Circuit, holds that a laborer in a tunnel, which, when completed, was intended to be used by the railroad to shorten its line over which it transported intrastate and interstate commerce, is not engaged in interstate commerce so as to maintain an action for personal injuries under the act.—*Raymond v. C. M. & St. P.*, 233 Fed., 239.

The Illinois Appellate Division holds that a railroad clerk, who is injured on railroad tracks while on his way to awaken a train crew, which was to take a train from one point in the state to a point in another state, is not directly engaged in interstate commerce, although he expected later to engage in a task which would have been one of interstate commerce.—*Mitchell v. L. & N.*, 194 Ill. App., 77.

The Illinois Supreme Court holds that a watchman in a railroad yard containing some cars loaded with interstate freight, who is killed by being run over by cars, is not within the act if not at that time directing or guarding cars loaded with interstate freight.

The Iowa Supreme Court holds that a roundhouse employee is employed in interstate commerce while preparing an engine for an interstate trip.—*Narey v. Minneapolis & St. Louis (Iowa)*, 159 N. W., 230.

A repairman injured while working on an interstate train, temporarily stopped in a yard exclusively used by interstate trains, was held by the Kentucky Court of Appeals to be engaged in interstate commerce.—*N. & W. v. Short (Ky.)*, 188 S. W., 786.

The Supreme Court of the State of Washington holds that icing a refrigerator car to receive a shipment of fruit for another state is an initial movement, after which, even in switching, the car is engaged in interstate commerce.—*Aldread v. Northern Pacific (Wash.)*, 160 Pac., 429.

A railroad's painter, using a paint gun to paint engines and cars used in interstate commerce, was held by the Maryland Court of Appeals to be within the act.—*B. & O. v. Branson (Md.)*, 98 Atl., 225.

#### Injuries to Farmer Climbing Over Cars

In an action for injuries sustained by being thrown from a train there was no allegation in the complaint that any of the trainmen knew the plaintiff was on the train. The train was blocking the plaintiff's farm crossing, and had been standing there nearly an hour. Plaintiff was returning to his farm buildings with his team, and he discovered a freight train completely blocking the crossing. It was on a bitter cold night, his horses and their blankets were wet, and after the trainmen had failed to move the train, on plaintiff's request, he placed his horses in an old barn for temporary shelter. He then climbed over the train, with the knowledge of the trainmen, to reach his farm buildings. After waiting nearly an hour he returned to get his team, which was inadequately sheltered. When the plaintiff approached the train on that occasion he was unable

to discover anyone in charge of it. He alleges that he was unable to pass around the end of the train, and was in the act of climbing over the same, when the train was suddenly started without any signal or warning, and he received the injuries of which he complains.

The New York Supreme Court, Trial Term, Sullivan county, held that if the plaintiff was a trespasser on the train, the employees owed him no duty other than not to injure him wantonly or willfully. If he was not a trespasser, the trainmen were charged with reasonable and ordinary care in the operation of the train so as not to injure him. In either event, if they did not know that he was on the train, they were under no obligation to him of giving any warning. The fact that the train was started without any signal, in violation of a rule of the company, is of no consequence if none of the employees knew of the presence of the plaintiff upon it, and there is no allegation of such knowledge contained in this complaint. Nor had the plaintiff any right to place himself in a situation of danger simply for the protection of his property, without being guilty of such negligence as will preclude a recovery for a personal injury received in so doing.—*Knoll v. N. Y. O. & W.*, 160 N. Y. Supp., 922.

#### Jurisdiction of Interstate Commerce Commission

The New York Appellate Division holds that under section 9 of the interstate commerce act a state court before application for redress to the Interstate Commerce Commission had no jurisdiction over an action by the consignee of interstate freight to recover alleged overcharges for demurrage collected by the railroad pursuant to a tariff governed by the uniform rules approved by Interstate Commerce Commission, application to the commission for redress being a condition precedent to the right to bring any action in the state courts.—*Hunter v. N. Y. N. H. & H.*, 161 N. Y. Supp., 10.

### UNITED STATES SUPREME COURT

#### Damages for Overcharge—Discrimination in Use of Cars

The Supreme Court of the United States has reversed the judgment of the Kentucky Court of Appeals, which had affirmed a grant of "general damages" to the Ohio Valley Tie Company against the Louisville & Nashville for charging unreasonable rates for the transportation of ties. The jury's verdict was for \$6,971.56 itemized expenses and \$50,000 damages to the tie company's business and credit.

On appeal the Supreme Court said that the important feature of the case (which began in 1910) was that the railroad maintained and collected a higher rate for ties than it did for lumber when they were carried between states, although within the state the state commission required the same rate on both; and although, as the railroad knew, the Interstate Commerce Commission had repeatedly decided that the rates for ties and lumber should be the same. To avoid payment of interstate rates, the tie company billed its ties under the lower intrastate rate to Louisville and then reshipped them to points outside the state. The railroad met this by refusing to let its cars leave its road, and by demanding that the tie company unload them, conditions not required from other shippers. Before bringing the suit the tie company complained to the Interstate Commerce Commission of charges collected on 91 carloads, and in 1912 obtained an order that the railroad pay it \$6,198 as reparation for unreasonable rates; also requiring the road to establish a rate for ties not to exceed that for lumber of the same kind of wood. This award the railroad paid. The Kentucky Court of Appeals held that the award still left open an action in the state courts to recover what are termed general damages. In this the United States Supreme Court holds the Court of Appeals was wrong. It is of opinion that all damage that properly could be attributed to an overcharge, whether it were the keeping of the tie company out of its money or the damage to its business following as a remoter result of the same cause, must be taken to have been considered in the commission's award and compensated when that was paid; but that this decision does not prevent a recovery if, at a new trial, the tie company can prove that the railroad unjustifiably refused cars or caused it other damage not attributable to the overcharge of freight.—*Louisville & Nashville v. Ohio Valley Tie Co.* (decided December 18, 1916).

## Railway Officers

#### Executive, Financial, Legal and Accounting

Herbert W. Johnson has been appointed auditor of expenditures of the Chicago, Burlington & Quincy, to succeed John D. Shields, promoted.

C. R. Hudson, assistant secretary of the National Railways of Mexico at New York, has resigned to become vice-president and general manager of the Cuba Railroad, with headquarters at Camaguey, Cuba.

The offices of vice-president and general manager of the Delaware & Hudson have been separated, and C. S. Sims, vice-president, will in future have charge of the operating and traffic departments, with office at Albany, N. Y.

S. D. Locke, Jr., chief clerk in the office of the auditor of passenger accounts of the Seaboard Air Line at Portsmouth, Va., has been appointed auditor of passenger accounts, succeeding Thos. H. Wright, who, at his own request, has been retired upon a pension after 45 years of service.

John D. Shields, auditor of expenditures of the Chicago, Burlington & Quincy, has been promoted to auditor of freight accounts, effective January 1, succeeding James W. Newell, who resigned to go with another company. Mr. Shields will have charge of the loss and damage and overcharge claims, as well as of freight accounts. He was born in Keokuk, Ia., in 1870, and has been with the Burlington 32 years.

R. E. McCarty, general superintendent of the Pennsylvania Lines West of Pittsburgh, with office at Columbus, Ohio, has been elected resident vice-president, with headquarters at De-

troit, Mich., as was announced in these columns on December 29. He was born on April 25, 1862, at Leavittsville, Carroll county, Ohio, where he received his early education. He entered railway service in 1879, with the Pennsylvania as a telegraph operator, and later became train despatcher. From 1882 to 1893 he was assistant trainmaster of the Pittsburgh division, and was appointed trainmaster on the latter date. On January 1, 1902, he was promoted to division superintendent, which position he held until April, 1905,

when he became general superintendent of the Southwest system, with headquarters at Columbus, Ohio. The office of resident vice-president at Detroit, Mich., to which he has just been elected, is a newly created position.

#### Operating

G. L. Keller has been promoted to trainmaster of the Alabama, Tennessee & Northern, with headquarters at York, Ala.

Joseph P. Quilty has been appointed manager of mail, express and milk traffic on the Boston & Maine, with headquarters at North station, Boston, Mass.

A. J. Davidson, acting general superintendent of the Spokane, Portland & Seattle, with headquarters at Portland, Ore., has been appointed general superintendent, with jurisdiction over the operating and mechanical departments.

Warren C. Kendall, superintendent of car service of the Boston & Maine at Boston, Mass., has been appointed superintendent of transportation, with headquarters at North station,



R. E. McCarty

Boston, and the office of superintendent of car service has been abolished.

B. W. Browning, terminal trainmaster of the Norfolk & Western at Norfolk, Va., has been appointed superintendent of terminals, with office at Norfolk; E. M. Graham has been relieved of the duties of superintendent of terminals, and will devote his entire time to general agency matters.

R. C. White, engineer maintenance of way of the southern district of the Missouri Pacific, with office at Little Rock, Ark., has been appointed superintendent of the Memphis division, with headquarters at Wynne, Ark., to succeed D. O. Ouellet, transferred to the Valley division, with headquarters at McGehee, Ark. He succeeds T. A. Shea, who has been transferred to the Missouri division, with headquarters at Poplar Bluff, Mo., vice Phil Carroll, who has resigned to become general superintendent of the Texas & Pacific.

John A. Power, superintendent of shops of the Southern Pacific, Texas Lines, at Houston, Tex., whose appointment as assistant general manager was announced in these columns in the issue of December 8, was born in Ireland in 1873. On coming to America he took employment with the Texas & New Orleans, now a part of the Southern Pacific, in 1893, as an apprentice in the mechanical department. Subsequently he was machinist, gang foreman, machine shop foreman, roundhouse foreman, general foreman and superintendent of shops on the same system. As assistant general manager, he succeeds George McCormick, promoted.

J. T. Loree, assistant general superintendent of transportation of the Delaware & Hudson, at Albany, N. Y., who was granted leave of absence last July for military service, has been appointed general manager, with office at Albany. The general superintendent of transportation, chief engineer, superintendent of motive power, chief surgeon and superintendent of stores will report to Mr. Loree; J. A. McGrew, acting assistant general superintendent of transportation at Albany, will resume his duties as superintendent of the Saratoga and Champlain divisions, and the office of assistant general superintendent of transportation has been abolished; M. F. Leamy, acting superintendent of the Saratoga and Champlain divisions, will resume his duties at Albany as trainmaster of the Saratoga division, and F. R. Griffin, who was trainmaster at Albany, will resume his duties as assistant trainmaster of the Saratoga division.

James H. Dodds, the announcement of whose appointment as superintendent of the Ogden Union Railway & Depot Company, with office at Ogden, Utah, was made in these columns December 8, was born in May, 1867, at Burlington, Ia., where he received his early education. In April, 1886, he entered railway service with the Chicago, Burlington & Quincy as a station baggage man, and later was promoted to operator and agent in turn, leaving this company in September, 1889, to enter the employ of the Union Pacific. From November, 1889, to June, 1905, he was consecutively operator, agent, brakeman, conductor and despatcher, with that road. In June, 1905, he was appointed trainmaster of the Southern Pacific, and later was promoted to superintendent of the San Joaquin division, with office at Bakersfield, Cal., which position he held at the time his present appointment became effective. His new position includes jurisdiction over the freight terminals of the Oregon Short Line at Ogden.

#### Traffic

John M. McDermott has been appointed industrial agent of the Baltimore & Ohio, with office at Chicago, Ill.

George A. Garrett has been appointed general agent of the Union Pacific, with office at Washington, D. C.

R. H. Mills has been appointed commercial agent of the Gulf, Colorado & Santa Fe, with headquarters at New York City.

James Burton, Jr., has been appointed traffic manager of the Shreveport, Alexandria & Southwestern, with headquarters at Kansas City, Mo., effective January 1.

J. W. Melone, commercial freight agent of the Baltimore & Ohio, at Davenport, Iowa, has been appointed division freight agent, with office at Fostoria, Ohio, vice C. T. Wight, assigned to other duties, and Frank Hillinger has been appointed commercial freight agent at Davenport, vice Mr. Melone.

W. C. Bewley, commercial agent of the Georgia Railroad at Memphis, Tenn., has returned to Jacksonville, Fla., as commercial agent in charge of the agency at Jacksonville, which has been re-opened.

William Hodgdon, freight traffic manager of the Pennsylvania Lines West, has been appointed traffic manager, as was noted in these columns on December 29, 1916. He was born



W. Hodgdon

at St. Louis, Mo., on October 29, 1859. After a preliminary education he took a law course at Washington University in that city. In 1878 he entered the employ of the Ohio & Mississippi as a clerk in the general freight department, being soon promoted to traveling freight agent and then division freight agent. From 1893 to 1896 he was assistant general freight agent of the Baltimore & Ohio, with headquarters at St. Louis, Mo., and from 1896 to 1901 general freight agent of the Cleveland, Akron & Columbus at Cleveland, Ohio. In 1901 he was also made commercial agent of the Pittsburgh, Cincinnati, Chicago & St. Louis, with office at Columbus, O. From March, 1903, to January, 1907, he was general freight agent of the Terre Haute & Indianapolis, and later of its successor the Vandalia, and from January, 1907, to January 1, 1917, when his recent appointment became effective, he was freight traffic manager of the Pennsylvania Lines West, with headquarters at Pittsburgh, Pa.

#### Engineering and Rolling Stock

G. C. Nichols, master mechanic of the Alabama, Tennessee & Northern at York, Ala., has been promoted to superintendent of motive power and equipment, with headquarters at York.

T. K. Faherty, road foreman of engines of the Baltimore & Ohio, with headquarters at Grafton, W. Va., has been appointed supervisor of locomotive operation of the West Virginia district, with office at Wheeling, W. Va.

R. S. Claar, assistant engineer on the Duluth, South Shore & Atlantic, has been appointed office engineer with headquarters at Duluth, Minn., succeeding J. E. Bebb, resigned to accept service with another company, effective January 15, 1917.

George Mercer, general foreman of bridges and buildings of the Duluth, South Shore & Atlantic, and the Mineral Range at Marquette, Mich., has been appointed superintendent of bridges and buildings, with office at Marquette, and the office of general foreman has been abolished.

P. F. Smith, Jr., superintendent of motive power of the Central system of the Pennsylvania Lines West, with office at Toledo, Ohio, has been appointed general superintendent of motive power of the Lines West, with headquarters at Pittsburgh, Pa., succeeding D. F. Crawford, promoted; O. P. Reese, assistant engineer of motive power at Pittsburgh, succeeds Mr. Smith.

S. J. Maas, office engineer of the Missouri, Kansas & Texas at St. Louis, Mo., has resigned to become resident engineer of the Galveston, Houston & Henderson, with headquarters at Galveston, Tex. He succeeds F. W. Bailey, resigned to accept a position with the San Antonio & Aransas Pass as engineer maintenance of way, with office at Yoakum, Tex., a position which has been vacant for some time.

F. W. Taylor, the announcement of whose appointment as superintendent of motive power of the Missouri, Kansas & Texas, with headquarters at Denison, Tex., was noted in these columns December 8, was born on October 24, 1875, at Water Valley, Miss. He entered railway service with the Illinois Central as a machinists' apprentice at Water Valley, Miss., in 1893. After several years' experience as an apprentice and as



a journeyman machinist, he was appointed roundhouse foreman on October 1, 1901. In October, 1902, he was promoted to the position of general foreman, with headquarters at Jackson, Miss., where he served until October, 1903, when he was transferred to Louisville, Ky., as general foreman. On October 1, 1908, he was appointed master mechanic, with headquarters at Mattoon, Ill., and on April 1, 1912, was transferred to Waterloo, Ia., as master mechanic of the Minnesota and Iowa division. He was appointed superintendent of motive power of the International & Great Northern, with headquarters at Palestine, Tex., on January 1, 1915, which position he held at the time of his appointment as superintendent of motive power of the Missouri, Kansas & Texas, effective January 1, 1917.

George F. Blackie, whose appointment as assistant chief engineer of the Nashville, Chattanooga & St. Louis, with headquarters at Nashville, Tenn., has already been announced in



G. F. Blackie

these columns, was born on December 22, 1869, at Nashville. He was educated at Montgomery Bell Academy, and later studied engineering at Vanderbilt University, from which he graduated. In 1886 he began railway work as a rodman, and remained in that position until 1892, when he was made assistant engineer. Ten years later he was appointed principal assistant engineer of the Nashville, Chattanooga & St. Louis, and later in the same year was transferred to the general manager's office as engineer of roadway and

track, with headquarters at Nashville, which position he held at the time of his recent appointment as assistant chief engineer of the same road, as above noted.

Albert W. Newton, assistant to the president of the Chicago, Burlington & Quincy, has been appointed chief engineer, with headquarters at Chicago, succeeding T. E. Calvert, deceased, effective January 1. Mr. Newton was born at Jerseyville, Ill. He was engaged in general engineering practice from 1892 to 1898, and from 1898 to 1900 he was engineer of the Sny Island levee and drainage district, with headquarters at Pittsfield, Ill. His first railroad experience was with the Chicago & Alton from 1900 to 1903, during its reconstruction period. Mr. Newton was employed as assistant engineer, with headquarters first at Kansas City, Mo., and later at Bloomington, Ill. On March 15, 1903, he first entered the service of



A. W. Newton

the Chicago, Burlington & Quincy as construction engineer at St. Louis, Mo., in charge of the old Monroe, Mo., to Mexico extension. On October 1, 1904, he was appointed assistant engineer, with office at Chicago, and on December 1 of the same year returned to St. Louis as engineer of the Missouri district. On January 1, 1907, he became general inspector of permanent way and structures in the office of the vice-president, with headquarters at Chicago, and with the exception of a short period between November 1, 1908, and February 5, 1909, when he was temporarily division superintendent at Creston, Iowa,

continued in that position until January 1, 1915. On January 1, 1914, he was also appointed chairman of the federal valuation committee of the Burlington, and in connection with these duties became chairman of the engineering committee of the Western Group President's Conference Committee on Federal Valuation, both of which positions he still retains. On January 1, 1915, he was appointed assistant to the president, with headquarters at Chicago, and continued in that position up to the time of his recent appointment as chief engineer.

#### Purchasing

R. M. Nelson has been appointed assistant purchasing agent of the Chesapeake & Ohio, with office at Richmond, Va.

Roy Benson, chief clerk in the purchasing department of the Chicago & Western Indiana and the Belt Railway of Chicago, has been appointed purchasing agent, succeeding George L. Pollock, resigned to go with another company.

William A. Linn, assistant purchasing agent of the Chicago, Milwaukee & St. Paul, the announcement of whose appointment as purchasing agent with office at Chicago, Ill., was made in these columns last week, was born at Waukesha, Wis., January 4, 1863. He was educated at Carroll college, Waukesha, and entered railway service in 1882 in the accounting department of the Chicago, Milwaukee & St. Paul, where he remained until 1887. From 1887 to 1890 he was bookkeeper in the purchasing department, being then promoted to chief clerk in this same office. In 1900 he was appointed assistant purchasing agent, with headquarters at Chicago, Ill., which position he held at the time his present promotion became effective. He succeeded John T. Crocker, retired.

#### OBITUARY

W. J. Underwood, formerly general manager of the Chicago, Milwaukee & St. Paul, at Milwaukee, Wis., died at his home in Wauwatosa, on January 3, at the age of 65.

O. J. De Rousee, assistant to the president of the Pennsylvania Railroad, with office at Philadelphia, Pa., died on January 1 as a result of being overcome by gasoline fumes in his garage near his home in Germantown. A portrait of Mr. De Rousee and a sketch of his railway career were published in the *Railway Age Gazette* of October 6, 1916, page 615.

S. A. Hutchison, manager of the department of tours of the Chicago & North Western and the Union Pacific, died at his home in Chicago, Ill., on December 28, aged 58 years. He was born on October 31, 1858, at Philadelphia, Pa., where he received his early education. In July, 1873, he entered railway service with the Philadelphia, Wilmington & Baltimore as an office boy, and until August, 1881, was consecutively clerk, traveling auditor and stock clerk with this same company. From October, 1881, to December, 1883, he was baggage master, train agent, conductor and station agent on the Pennsylvania; and from January, 1884, to December, 1885, he was joint city passenger agent for the Lehigh



S. A. Hutchison

Valley and the Erie at Philadelphia, Pa. He was appointed traveling passenger agent of the Union Pacific in January, 1887, and was promoted to general traveling passenger agent in February, 1893. From February, 1898, to July, 1900, he was assistant general passenger agent of the same road, and was then appointed manager of its tourist department, as well as that of the Chicago & North Western, with headquarters at Boston, Mass. On January 1, 1901, his headquarters were transferred to Chicago, Ill., where he remained until his death.

## Equipment and Supplies

### Cars and Locomotives Ordered in 1916

See the article on page 28 giving additional information concerning the orders for cars and locomotives in 1916.

### LOCOMOTIVES

THE NORTHERN PACIFIC is inquiring for 25 Pacific and 10 Mallet-type locomotives.

THE UNION CARBIDE COMPANY has ordered one four-wheel locomotive from the American Locomotive Company.

THE LEHIGH VALLEY is converting 11 ten-wheel locomotives in its Sayre shops and plans to continue work on about 25 more.

THE AMERICAN STEEL & WIRE COMPANY has issued inquiries for 3 Mogul-type locomotives for service at its Cleveland (Ohio) plant.

THE ATCHISON, TOPEKA & SANTA FE, in placing its last order for 28 mikado-type locomotives with the Baldwin Locomotive Works, also gave that company an order for 2 experimental Mountain-type locomotives for use on heavy grades on its lines in Colorado.

### FREIGHT CARS

THE CARNEGIE STEEL COMPANY has issued inquiries for 12 flat cars.

THE ST. LOUIS SOUTHWESTERN is in the market for 100 30- or 40-ton cars.

THE PIEDMONT & NORTHERN is reported in the market for 100 gondola and 100 box cars.

THE UNION CARBIDE COMPANY has ordered 4 hopper cars from the Pressed Steel Car Company.

THE CHICAGO, ROCK ISLAND & PACIFIC is inquiring for specialties for repairing 2,500 freight cars in its own shops.

THE JACOB DOLD PACKING COMPANY has ordered 50 30-ton refrigerator cars from the American Car & Foundry Company.

THE CUBA DISTILLING COMPANY has placed orders for material for 100 tank cars and will assemble the cars in its own shops.

THE NORTHERN PACIFIC is inquiring for 300 refrigerator cars instead of 500 as reported. In addition, this company is also asking for prices on 500 steel gondola cars.

THE ATLANTIC COAST LINE, reported in the *Railway Age Gazette* of December 8 as being in the market for 200 hopper cars, has ordered 100 all-steel coal cars from the Standard Steel Car Company.

THE LOS ANGELES & SALT LAKE has increased its order for general service cars recently placed with the Western Steel Car & Foundry Company from 1,000 to 1,600, instead of 1,500 as reported previously.

THE BALTIMORE & OHIO, reported in the *Railway Age Gazette* of December 15 as being in the market for 1,000 55-ton hopper cars, has ordered 1,000 hopper cars from the Pullman Company and 1,000 from the Standard Steel Car Company.

### PASSENGER CARS

THE DELAWARE, LACKAWANNA & WESTERN, reported in the *Railway Age Gazette* of December 22 as having issued inquiries for 10 express cars, is also in the market for 10 vestibule coaches.

### IRON AND STEEL

THE ATCHISON, TOPEKA & SANTA FE has ordered two 60-ft. and two 50-ft. girder spans for Shattuck, Okla., 110 tons, from the American Bridge Company.

THE LOS ANGELES & SALT LAKE has ordered two 75-ft. and two 50-ft. through plate girder skew spans for Las Vegas, Nev., 236 tons, from the American Bridge Company.

THE NEW YORK, NEW HAVEN & HARTFORD has awarded a contract to the Strobel Steel Construction Company for 2,230 tons of structural steel for the strengthening of the bridge over the Hudson river at Poughkeepsie, N. Y.

### MACHINERY AND TOOLS

THE GREAT NORTHERN has issued a very long list of machine tools on which it desires prices. The list includes 46 requisitions and includes a 55-ft. turntable, a number of bridge cranes (one of 100 tons capacity), a large number of electric motors and one of the largest lists of shop tools which have been issued for a long time.

### SIGNALING

THE VIRGINIAN RAILWAY is to instal a mechanical interlocking, with a 16-lever machine, at the crossing of the Norfolk Southern, at Coleman Place, Va.

THE NEW YORK CENTRAL is to instal telephone despatching on the St. Lawrence division, and has bought the selectors of the General Railway Signal Company. Sixty-nine stations are to be equipped.

THE OREGON-WASHINGTON RAILROAD & NAVIGATION COMPANY has bought from the General Railway Signal Company the material for an electric interlocking plant at Aberdeen, Wash., the machine to have 12 levers.

THE OREGON SHORT LINE is to instal automatic block signals between Cache Junction, Utah, and McCammon, Idaho, 62 miles. The signals will be model 2A top-of-mast, furnished by the General Railway Signal Company.

THE SELBY SAFETY FLAG COMPANY, St. Louis, Mo., has received orders from the Gulf & Ship Island for improved flagman's signal outfits for passenger train crews, and is advised that freight train crews will be later equipped with the same device. The statement is made that the Gulf & Ship Island is the tenth system to adopt the Selby outfit.

THE PENNSYLVANIA has let a contract to the General Railway Signal Company for an electro-mechanical interlocking machine to protect the Delaware Junction and Christiana (Pa.) draw-bridge. The machine will have eight mechanical and sixteen electrical levers. Electric detector locks will be provided for all switch and signal levers. A 16-lever electro-mechanical interlocking plant will also be built at Dravosburg, Pa.

### MISCELLANEOUS

THE MISSOURI PACIFIC has awarded a contract for 9 water-treating plants of the Miller type to the Railroad Water and Coal Handling Company, Chicago. These plants are similar in design to 35 installed previously on this system. Upon their completion the main line between Kansas City and Pueblo, Colo., will be practically completely equipped with water-treating facilities and the two engine districts extending from Hoisington, Kan., west 333 miles to Pueblo, Colo., will be completely equipped.

NEW YORK CITY TO BUENOS AIRES.—This is the modest extent of a railway, which is recommended in a report made to President Wilson by the International High Commission, appointed to promote closer relations between the United States and Latin-American countries.

SWEDISH ELECTRIC POWER.—The richness of Sweden in water power, and Denmark's natural poverty in any sources of power, has led to Sweden exporting electric power across the Sound. The works are established on the small river Laga, in Smaland, and the current is carried by overhead wires to Helsingborg, and thence by three submarine cables under the waters of the Sound to Marienlyet, north of Elsinore, on the island of Seeland. The Swedish power station sends 500 horsepower to Denmark, but the company is undertaking to increase this to 5,000 horsepower. Precautions have been taken so far as possible to prevent the cables being fouled by the anchors of ships.

## Supply Trade News

S. C. Stebbins, formerly western sales manager of the Lansing Company, Lansing, Mich., has been elected secretary of this company.

Ike W. Lincoln has been appointed manager of the railroad and car material department of the C. A. Goodyear Lumber Company, Tomah, Wis., effective January 1.

Alfred Blunt Jenkins, of Jenkins Brothers, New York, manufacturers of valves and rubber goods, died December 29, at his home in Llewellyn Park, West Orange, N. J., age 69.

W. W. Butler has been appointed a vice-president and managing director of the Canadian Car & Foundry Company, and F. A. Skelton, the secretary-treasurer, has also been made a vice-president.

George L. Pollock, purchasing agent of the Chicago & Western Indiana and the Belt Railway of Chicago, has resigned to become vice-president and treasurer of the Burnside Steel Company, with headquarters at Chicago, Ill. He was born on December 8, 1874, at Burlington, Iowa, and entered railway service with the Chicago, Burlington & Quincy in May, 1892. From December, 1905, to May, 1906, he was chief clerk to the purchasing agent of the Wabash, with office at St. Louis, Mo., following which he was appointed purchasing agent of the Wheeling & Lake Erie. In May, 1910, he became purchasing agent of the Chicago & Western Indiana and the Belt Railway of Chicago, from which position he has



G. L. Pollock

just resigned to become vice-president and treasurer of the Burnside Steel Company, as noted above.

E. P. Hobson, formerly with the Sherwin-Williams Company, has been appointed railroad sales representative of the Barrett Company, with headquarters in the Illuminating building, Cleveland, Ohio, effective January 1.

Directors of the Midvale Steel & Ordnance Company on January 3 declared an initial quarterly dividend of \$1.50 a share, payable February 1 to stock of record January 20. The declaration, placing the stock on a \$6 per annum basis, is equivalent to 12 per cent per annum on the stock, the par value being \$50.

Announcement is made of a trustees' sale in bankruptcy by order of the United States District Court of the Cincinnati Equipment Company's railroad car repair shops, with 13 acres of land and concrete buildings, tracks, switches, etc., at Cullom's station, Riverside, Cincinnati, Ohio. The property is on the Baltimore & Ohio and New York Central.

Frank B. Smith, for some years connected with the commissioner's office of the Victorian Railways and who for the past three years has been railway representative for Australasia for the Vacuum Oil Company, with headquarters in Melbourne, is in New York with the object of securing agencies for Australasia. Mr. Smith proposes to establish a railway supply company in Australia to handle railway trading there; and he would like to hear from railway supply firms who are desirous of opening up an export business in Australia. He may be reached care of the *Railway Age Gazette*, Woolworth building, New York.

George W. Bender, manager of the mechanical department of Mudge & Co., manufacturers of railway specialties, Chicago, Ill., has been appointed assistant to the vice-president of this company. He was born on August 20, 1884, at Pittsburgh, Pa., and entered the service of the Pressed Steel Car Company in that city in 1901, being assigned to the engineering department. In 1906 he was employed by the American Locomotive Company, where he later had charge of the extra work order department. From 1908 to 1910 he was in the engineering department of the Pressed Steel Car Company, resigning to become chief draftsman of Mudge & Co. Subsequently he was appointed manager of the mechanical department, which position he held at the time of his promotion, noted above.

The United Hammer Company, 141 Milk street, Boston, Mass., has purchased the power hammer business of E. & T. Fairbanks & Co., St. Johnsbury, Vt., and is prepared to furnish complete Fairbanks power hammers of all sizes for prompt shipment, as well as parts and repair sections. Fairbanks hammers have been manufactured since 1890; first by the Dupont Manufacturing Company, St. Johnsbury, Vt., who marketed them under the name "Dupont" hammers. In 1902 the business was taken over by E. & T. Fairbanks & Co., St. Johnsbury, who have been manufacturing them since, they giving the machine the name "Fairbanks" hammers, which title will be continued. During the time E. & T. Fairbanks manufactured these hammers they were sold by their selling agents, the Fairbanks Company, of New York, and branches, in the east; by Fairbanks, Morse & Co., Chicago, and branches, in the west, and by the Canadian Fairbanks Company in Montreal, and branches, for Canada. They were also handled in Europe by the London, Glasgow, Paris and Hamburg branches of Fairbanks Company. These hammers are known throughout the world, some 1,400 installations having been made.

R. W. Young, secretary and general manager of the Weir & Craig Manufacturing Company, Chicago, Ill., has resigned to organize and become president of the R. W. Young Manufacturing Company, manufacturer of electric and pneumatic hoists, mono-rail cranes and electric and pneumatic turntable tractors. Mr. Young was born in Hamilton, Ont., and is a graduate of the Collegiate Institute of that city. In 1892, he went to Chicago to enter the firm of Russell Brothers & Young, iron founders, then being established. This concern carried on business for several years and then sold out, at which time Mr. Young became manager of the Liquid Carbonic Company at Pittsburgh, Pa. In 1902, he returned to Chicago to become secretary and general manager of the Weir & Craig Manufacturing Company.



R. W. Young

### TRADE PUBLICATIONS

**SAFETY PANELS.**—The Sprague Electric Works of the General Electric Company, New York, has recently issued an eight-page booklet describing its safety panels. The booklet has an unusual cover, the latter being so cut as to represent the doors on the panel. A center section holds back like the door to the switches, and another like the door to the fuse compartment.

**THAWING OUTFIT.**—The Hauck Manufacturing Company, Brooklyn, N. Y., has issued a pamphlet describing its kerosene thawing outfit and torches, and illustrating their use on railroads, for such purposes as the thawing of track work, switches, signaling, hopper cars and the like. Several pages are devoted to detailed descriptions of the several sizes and types of burners made.

## Railway Construction

**ATCHISON, TOPEKA & SANTA FE.**—This road is making new surveys and retracing old lines from Hollyrood, Kan., west to Galatia, a distance of about 35 miles. The right of way is being acquired and construction work is expected to begin at once.

**GULF PORTS TERMINAL RAILROAD.**—Incorporated in Florida with \$1,000,000 it is said, to build and operate a railroad from Pensacola, Fla., to Mobile, Ala., with branch lines. It is understood that the Pensacola, Mobile & New Orleans, which is building from Pensacola, Fla., to Mobile, 59.7 miles, on which about 25 miles of track remains to be laid to complete the line, may form part of the new road. E. McLaughlin, president, Pensacola, Fla.

**NATIONAL RAILWAYS OF MEXICO.**—The de facto government of Mexico has ordered a survey made for a proposed extension of the Monterey-Matamoros branch of the National Railways of Mexico from Matamoros, Mex., to the mouth of the Rio Grande, a distance of about 30 miles. It is officially stated that this extension will be built in the near future so as to give employment to some of the thousands of idle laborers of this section. It is also announced that the de facto government has in view the construction of large harbor and port works near the mouth of the Rio Grande in order to obtain a deep-water outlet for the ocean-going trade of the northern part of the republic.

**NORTH TEXAS & SANTA FE.**—This company, a subsidiary of the Atchison, Topeka & Santa Fe, has awarded a contract to the L. J. Smith Construction Company, Kansas City, Mo., for the building of a line from Shattuck, Okla., to Spearman, Tex., about 90 miles.

**OSAGE & SANTA FE.**—The Atchison, Topeka & Santa Fe has applied for a charter for a line to run from a point below Caney, Okla., through Pawhuska, to a connection with its line at Ralston, Okla., a distance of about 70 miles. Interested parties have already furnished the necessary right of way and actual construction will be started as soon as the charter is granted. The work will be done by contract, only the track and bridge material being furnished by the railroad.

**SOUTHEASTERN RAILWAY OF HUNTSVILLE.**—Incorporated in Tennessee with \$10,000 capital, it is said, to build a line from the mouth of Branch creek in McCreary county, Ky., to a connection with the Cincinnati, New Orleans & Texas Pacific, in Scott county, Tenn. The incorporators include J. G. Bauer, E. L. Stephens and G. B. Durell, of the Kentucky Southeastern Coal Company.

**SOUTH PLAINS & SANTA FE.**—Contracts have been awarded to John Scott & Co., St. Louis, Mo., for the construction of this line from Lubbock, Tex., to Brownfield, 65 miles. The Atchison, Topeka & Santa Fe will furnish the track and bridge material and the contractors will supply all other materials and do all the necessary construction work.

## RAILWAY STRUCTURES

**FREEPORT, PA.**—The Pennsylvania Railroad has given a contract to W. H. Fissell & Company, New York, to build a two-story passenger station at Freeport. The structure will be 40 ft. by 113 ft., of rough texture brick, green tile roof, with terra cotta trimmings, and will cost \$50,000.

**JAMESTOWN, N. Y.**—The Erie Railroad has given a contract to the Warren Construction Company, Jamestown, to build a new freight house at Jamestown.

**PITTSBURGH, PA.**—The Pennsylvania Railroad will start work next March, it is said, on the enlargement of its terminal in Pittsburgh. The plans call for putting up a 20-story building on the approach to the present Pennsylvania station, the vacation of New Grant street by the city and the widening of Cherry Way as an approach to the terminal.

## Railway Financial News

**MISSOURI, KANSAS & TEXAS.**—A petition to file a suit has been made by a Chicago attorney against certain former members of the executive committee of the Missouri, Kansas & Texas, in regard to which Frank Trumbull, chairman of the board, said in part: "Mr. Stein, of Chicago, attorney for the plaintiffs, asked me for a conference, to which I readily assented, but later he asked that the payment of his expenses be first assured, which I, of course, was obliged to decline."

**NEW ORLEANS & NORTHEASTERN.**—See Southern Railway.

**PITTSBURGH, CINCINNATI, CHICAGO & ST. LOUIS.**—Articles of agreement have been filed with the secretary of state of Ohio providing for the consolidation of the Pittsburgh, Cincinnati, Chicago & St. Louis, the Vandalia, the Pittsburgh, Wheeling & Kentucky, the Anderson Belt, and the Chicago, Indiana & Eastern under the name of the Pittsburgh, Cincinnati, Chicago & St. Louis.

**SOUTHERN RAILWAY.**—This company has bought from J. P. Morgan & Co. the controlling stock of the New Orleans & Northeastern. Until recently the controlling stock was owned by an English investment firm, although the road formed part of the Queen & Crescent. The New Orleans & Northeastern runs from New Orleans, La., to Meridian, Miss. The Southern Railway announces that it has parted with all interest, direct or indirect, in the Alabama & Vicksburg and the Vicksburg, Shreveport & Pacific.

**TENNESSEE CENTRAL.**—The Nashville (Tenn.) Banner, in its issue of December 20 says in part: "The proceedings instituted a few days ago by the receivers of the Tennessee Central to prevent the Nashville Terminal Company from having the lease of the terminals to the railroad forfeited, is of momentous importance to Nashville; and every business organization and public-spirited citizen are called upon to render every possible assistance to Mr. Chamberlain and Judge McAlister in this matter."

"A forfeiture of the contract would render worthless, or practically so, the Tennessee Central; and would put the terminal company in position to sell out to the Louisville & Nashville, or to dictate any kind of ruinous contract with the Tennessee Central."

"This situation is the more harassing when it is considered that the \$1,000,000 contributed by Nashville was used in a way that makes possible the present conditions whereby a subsidiary company, the Nashville Terminal Company, swallows the parent organization, the Tennessee Central."

**WABASH.**—An initial quarterly dividend of 1 per cent has been declared on the preferred "A" stock.

**TRANSCONTINENTAL OF AUSTRALIA.**—Up to July 29, 1916, the cost of the east-west transcontinental line of Australia from Kalgoorlie to Port Augusta was £4,255,961 (\$20,683,970), exclusive of rolling stock and stores on hand. Rolling stock had cost £809,745 (\$3,352,361). Recent advices say that 917 miles have been laid and that only 41 miles are required to complete the railway.

**A RESTRAINT ON RAILWAY TRAVEL.**—The notice issued on the 29th ult. by the Board of Trade as to unnecessary travel by railway, to which we referred in our last issue, is now, we believe, to be followed by very drastic changes in the passenger service which will probably come into force on January 1. The subject was discussed very fully at a meeting of the Railway Executive Committee on Tuesday, and the changes will probably take the form of a considerable reduction in the long-distance express trains; of an increase in the running times of fast trains; an increase in the long-distance passenger fares, and the weight of free luggage brought down to the amount prescribed in the statutory powers. In addition to these changes there will probably be a further reduction in the restaurant car service and some of the sleeping cars may be withdrawn.—*Railway Gazette, London.*